ماجستير تناسليه (7)

Erectile dysfunction

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Medical Causes of ED (80)

[illegible] → Drug induced ED

Systemic diseases

- **CVS**
  - HTN
  - PVD
  - Coronary Art. dis.
  - " bypass surgery
- **Resp.**
  - sleep Apnea.
  - COPD
  - Heavy snoring
- **Renal** → RF
- **Hepatic** → LCF
- **Metabolic**
  - Hemochromatosis.
  - Amyloidosis.
- **DM** (Most common).

Drugs (Drug induced ED)

- **Therapeutic** → See below
- **Recreational** → See below

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1. CVS (HTN, PVD, CAD, C. bypass) → Aggravating Factors:

- Smoking.
- Aging.
- DM.
- Drugs.
- Hypercholesterolemia.

Treatment

1. General Measures

- Correction of aggravating factors
- Cooperation bet. Andrologist / Cardiologist as regard
  - life style
  - [illegible]

- Viagra
- ICI — Papav α (C.I) (...), PGE₁, Phenylephrine.
- Implant → # → Prosth. valve, Artif. System

2. Viagra → C/I in patients e. Therapy for coronary Ht dse → cause fatal hypotension

(3) ICI:

- Papaverine → better avoided d.t its High systemic absorpt → ↓
  - Hypotension
  - Vasovagal reflex (sp. if venogen. Imp.)

- Prostaglandin E_1 (prostin VR):
  - more safe when used in small dose (5μ) ∴ occlusion of penile base To avoid systemic pass.
  - If There is prolonged Erection or priapism → Vasoconstrictors are risky
    - ↓
    - α agonist ← phenylepherine (least Cardiogenic effect)
    - Dopamine HCL

(4) Penile prosthesis → Avoid it in pts. c < inflatable valves or ext. prosthesis
(d.t risk of Hematogenous inf. postoperatively.

Sexual intercourse → prefer female superior position

CV dis. → No papaverine
Small dose PG
if need Vasoconstrictor → phenylepherine.
If take nitrate # Viagra.

2 Respiratory diseases: ← Apnea, COPD, Snoring

. Sleep Apnea & Heavy Snoring → Arterial ↓ O2 Hypoxia & Hypercapnea → pulm. & systemic HTN.

↓

Clear Association bet. ED & Sleep Apnea

. COPD → ED in ≃ 30%

3 Hepatic dis:

. Chr. liver dis. ass. ē ED in 50% of cases but incid. is ↑↑ to ≃ 70% in cases of Alcoholic Cirrhosis.

. Mechanism:

. ↑PRL Prolactin

. ↑ SHBG

. ↑ Estrogen → -- LH → ↓ T.

. Alcoholic liver toxicity → Toxic effect on the axis (HPTA)

Q. # → . PGE1 → most safe.

. Papaverine → # (hepatic S.E).

c/p - ↓ desire

- Gynecomastia

- E.D

[3] Renal diseases: (d) Q

- RF is ass. c̄
  - 50% ED.
  - ↓ desire.
  - Infertility.

Mechanism:

Endocrinal (AXIS)
- ↑ PR d.t
  - ↑ producti
  - ↓ clearance
  - Drugs: Cimetidine, Aldomet, Digoxin
- ↓ FSH & LH
- ↓ Testost.

Vascular
1. Arterial occlusion d.t Accelerated Asthrosclerosis
   or
2. Veno-occlusive DYSF.

(arteriogenic or venogenic).

Neurological
- Neuropathy (Somatic & Sensory Neuropathy)

Others
- Anemia
- Zinc def.
- ↑ Parathermone
- Diabetes.
- Psychic stress
- Anti HTN

Treatment

1. Medical
   - Androgen Replacement.
   - Zinc supplementation.
   - PRL Inhibitory drugs
   - Erythropoietin.
   - Viagra use

2. ICI
   - Effective
   - High dose c̄ arterial dis
   - Resistant in venogenic dis.

3. Penile Prosthesis: Best if ED persist after Renal Transplantation.

4. Renal Transplantation: Most efficient.
   - restore Erection in ≃ 80%.
   - persistent ED after Transplant is d.t ligation of Int. iliac during Transplant to be used for Anastmosis.

[4] Metabolic

(i) Hemochromatosis:
- Accumulation of Fe in Tissues
  - Pituit.
  - Testes
- D.M

(ii) Amyloidosis:
- Heredofamilial Type may involve the autonomic System → Neurogenic ED
- ↓
- No specific tt
- (Cause of death is RF).

Endocrinal ED

87

1. Hypothalamic disorders
2. pituitary disorders
3. Thyroid
4. Pancreatic → DM ✓
5. Adrenal
6. Testicular

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1. Hypothalamic disorders → Hypogonadotropic Hypogonadism
↓ GnRH, LH → ↓ testosterone → ↓ libido

2. pituitary Causes :

Hypogonadotropic Hypogonadism
(↓ GnRH)

Hyperprolactinemia
Mech. ← -- GnRH → ↓ T
-- 5α reductase
direct effect on Testes (±)

Clinically ED ass. with :
↓ libido ✓
Gynecomastia ✓

Causes → See infertility

NB ↑PRL = ↓ Libido, Gynecom.

3 Thyroid disorders:

Hypothyroidism

↓ T_3, T_4 → ↑TRH → ↑ PRL.

Hyperthyroidism

- Mech. ↑SHBG → ↓Fee T.
  ↑ Estrogen (d.t ↑ aromatization of Test.) → ↑ PRL

So

- ED
- ↓ libido
- Gynecomastia

NB Hyperthyroidism & Androgen Resistance Synd.

2 Endocrinal causes of ED that's not Ass. with ↓ Test. This can be Explained BY ① Hyperthyroidism : → only Fee T is ↓↓.

② ARS : → receptor Resistance. (↑↑ T. level)

4 Pancreatic Causes → Diabetic Impotence

- Initial Commonest Endocrinological Cause of ED.
- DM ↑↑ ED 3 times risk > NL
- Diabetic at 30 Y. → 15% ED
  60 Y. → 50% ED

- Risk groups : ① old age
  ② long duration
  ③ Alcohol intake
  ✓ ④ Neuropathy
  ✓ ⑤ Retinopathy
  ✓ ⑥ Intermittent Claudical

CIP (Types):

Classical diabetic ED

- NL desire & Hormones.
- Retrograde ejac. ±
- Noct. Erect^n: ± Abn̲L despite of NL Sexual Erect^n.
- Sexual Erection: gradual ↓ Rigidity — Followed by → ↓ Freq. of Noct. Erect^n.
- psychogenic stress (performance Anxiety) → Convert it from Partial → complete; (Organic ED → Psch. ED)

→ Reversible in 8.5%

Atypical (Acute) diabetic ED

- ass. with poor Control & Severe Symptoms (→ Acute)
  - Hunger pain
  - Thirst
  - W.t loss
  - Polyuria.

→ Reversible

Pathogenesis

1. Neuropathy → autonomic & Somatic Neuropathy
   So usually ass. ē Neuropathic Bladder
   Retrograde EJ → d.t Common NS of Bladder & Penis.
   d.t Bladder dysfunction ← Retrograde EJ
2. Vasculopathy → Microangiopathy: of Small B.V. → Narrowing
   - Asthrosclerosis: d.t ass. Hypercholesterolemia
   - Arteriosclerosis (lost elasticity): d.t ass HTN

3. Cavernous (Endothelial) . ↓ Neurotransmitters < VIP / NO
. ↑ ms. Tone . → weak erection

4. Metabolic Neurogenic Tissue Glycosylation
→ ED

5. Psychogenic . Partial ED → Severe performance
Anxiety → Complete ED.

لا حظ NL . Hormones . Desire + Bladder Symptoms

Diagnosis of Diabetic ED : التشخيص

① History
② Exam. → Neurological reflexes
③ Invs

⚠1 Differentiate bet. organic & Psychogenic < ICI / Rigiscan

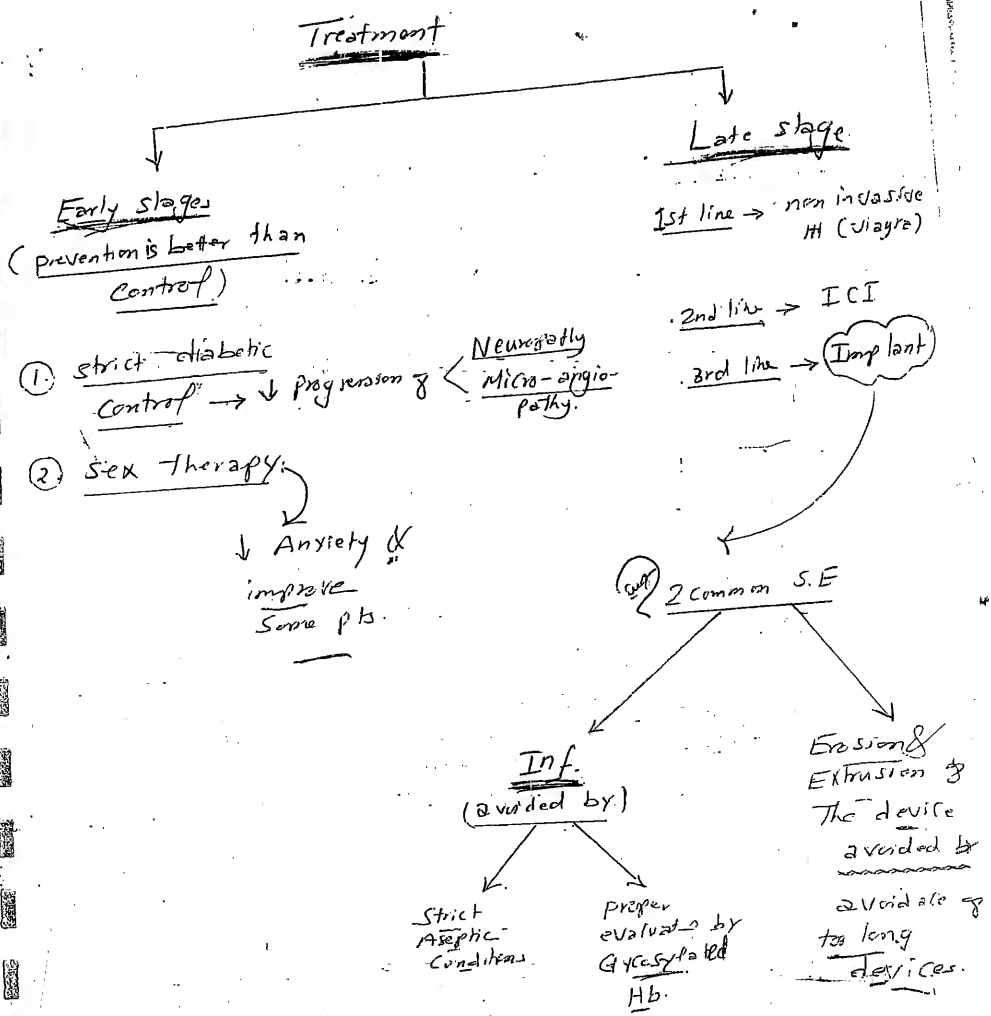
⚠2 detection of Cause → organic:

. Inv. For Arteriogenic
. " " Veno-occlusive
. " " Neurogenic.

ICI
Arteriogenic
Veno-occlusive
Neuro

ماتنساش

Predictors of diabetic ED < Retinopathy . / Neuropathy .


Treatment
Early stages
(prevention is better than control)
Late stage
1st line → non invasive HH (Jiayre)
2nd line → ICI
3rd line → Implant
1. strict diabetic control → ↓ progression & Neurogenic Micro-angiopathy.
2. Sex therapy:
↓ Anxiety & improve some pts.
2 common S.E
Inf. (avoided by)
Strict Aseptic conditions
proper evaluation by Glycosylated Hb.
Erosion & Extrusion of the device avoided by
avoidance of too long devices.

89

5 Adrenal disorders:

Addisons

Hyperadrenalism
(↑ Cortisol)
Pit. Tm → Cushing
ACTH { Exog. CS
Ex of. ACTH Tm.

Hypoadrenalism
Causes generalized debilitation → Fatigue, HypoTN & ED

ED is d/t { Pit. Tm → pit dysf.
direct effect of cortisol on Pit.
direct -- effect of Cortisol on Testes.

Aging.
↓
Hypogonadism
↓
Testost.

6 Testicular disorders:

... The basic rule.. is that androgen replacement therapy is not effective (in) improving the sexual desire & performance except in patients ē documented androgen deficiency
- Oral or injectable androgens arn't physiological ways in delivering androgens.
- New transdermal androgen delivery systems may be more physiological as they produce Serum Level Similar to NL biological rythms...

Dry Glandular Autoimmune disease :- An Autoimmune disease that transmitted as an Autosomal dominant disease ē Circulatory antibodies against many Endocrine glands → Multiple Endocrinal Failure.. -- Less common in males. In Addition to Testicular failure There may be Hypothyroidism, Hypoparathyroidism & I.D.M -- it has to diff. from panhypopituitarism.

سؤال احكيله عنه

سؤال امتحان تشيل

Iatrogenic ED

1. Surgically & Trauma Induced ED
2. Drug induced ED

A. Surgically induced ED

1. Arteriogenic:
   - Pelvic operation
   - Abd. operations.
   - Pelvic Trauma & Irradiat ↓

   → Aortofemoral by pass
   → Iliofemoral by Pass.
   → Renal Transplant

   usually causes injury to Int. pudendal a. Common Penile a. in pt. 20-40 y.

B. Venogenic ED:

- Priapism
- fracture
- Lue IV

- Lue II: Abnormalities of Tunica Albuginea
  Penile trauma
- Lue III: Abnormalities of Cavernous smooth ms → Priapism
- Lue IV: Abnl Acq. Venous Communicat^ (Fistula)

Shunting operat^ for priapism

- Trauma
- Transurethral Surgery

101

(C) Neurogenic ED:

- Brain → Trauma
- Spinal Cord → . Disc
  . SCI
- Peripheral Nerve Injury:
  - operat^ on : UB, Prost, urethra.
  - pelvic fracture
  - TURP

(D) Penile Causes of Iatrogenic ED:

- Peyronie's d.t. trauma by: ICI, VCD, Sexual Inter.
- HH may → ED
- Priapism → Pelvic ← Edema, Hematoma → obstr., Metastases of Peni.
- Priapism → Surgical Shunting → Venogenic ED
- Priapism → Excision Plasty

(E) Endocrinological Cause:

Trauma a operat^ to: Hypoth, Pit., Testes, Suprarenal, Thyroid.

drugs

(F) Medical Causes

7. Hormones

- Oestrogens (in HTG (Cancer Prost.) → ↓ libido.
- GnRH Inhibitors: leuprolide.

Antiandrogens

- Cimetidine (++)
- Ranitidine (+)
- Famotidine (No)
- Aldactone
- Ketoconazole
- Cyproterone acetate (Diane)

(9) Flutamide

New Anti-androgen without effect on libido or potency

8. Recreational Drugs

(A) Alcohol

Acute effects

- Small dose → ↑ desire (d.t release from inhibit)
- large dose → acute ED (d.t central inhibition of dopaminergic system)

Chr. effects

- ED
- ↓ Libido
- Gynecomastia
- ejac. disturb.

Why:
- CNS depression
- neuropathy
- ↑ PR
- direct effect on testic. funct.
- LCF → Testosterone ↓

(B) Marijuana, Cocaine, Heroin:

- ↓ Test.
- ↓ libido
- Gynecomastia
- ED

(C) Smoking.

9. Other Drugs

Acute effects → acute VC & disturbance in Veno-occlusive Mechanism of Corp. Cav.

ICI (↓ Nitric oxide) → (Failed test)

Chr. Effects

Inverse relationship between No. of Cigarettes & rigidity & duration of Noct. Erect.

↑ Risk if
- Aging
- DM
- HD

- Digoxine: similar in its structure to sex steroids
  - ↓ T
  - ↑ PRL
  - ↑ Estrogen
- NSAIDs
- ↑ Metronidazole.
- Cytotoxics → MTX, cyclophosphamide
- Clofibrate. (Anti Hyperlipidemic)

Drug induced ED. (=> 200 drugs). (91)

(إدخال أدوية)

1. Anti Hypertensives
2. Anti depressants
3. Anti psychotics
4. Anti anxiety
5. Antihistaminic
6. Anti cholinergic
7. Hormones
8. Recreational
9. others

① Antihypertensives

(↓ B.P below critical level necessary to maintain suff. flow for penile erection usually in an atherosclerotic a. because diseased aa. need BP > their dilatation).

ⓐ Centrally acting sympatholytics (↑PR, ↓ libido, depression)
- α-Methyl dopa
- Clonidine
- Reserpine

ⓑ α-adrenergic blocker (ED & ± retrograde ej)
- Phenoxy benzamine
- Prazosin (Minipress)

ⓒ β-adrenergic blocker (↓ libido, < PD → Peyronie's D.)
- BB

NB:
- α1: Agonist → Ephedrine & Pseudo; Antagonist → Prazosin
- α2: Agonist → Clonidine; Antagonist → Yohimbine

ⓓ α & β Blockers
- Guanithidine (ED & Aspermia)

ⓔ V.D → Hydralazine (ED & ± priapism)

ⓕ Diuretics →
- Aldactone (??)
- thiazides
- Frusemide

(rare)

③ ACE-I, CCB (±), Minoxidil → * the only Antihypertensives that don't cause ED (Mixed results; improve erectn)

2. Antidepressants

(So use ē Yohimbine)

- TCA (Tofranil)
- phenothiazine
- Fluoxetine
- MAO

Chol. & adren. blocking, ↑PR, -- CNS → d.t. ED, ↓ libido, Gynecomastia, Aspermia.

3. Antipsychotics (Major Tranquilizers)

(schizophrenia)

- phenothiazines
- thioridazine
- chlorpromazine

4. Anti Anxiety (minor tranquilizers)

- Benzodiazepines (as diazepam)
- barbiturates

↓ libido, Aspermia

5. Antihistamines

- diphenhydramine.

6. Anticholinergic

- Atropine
- Antispasmodics (Prostigmine)
- Anti Parkinsonism (Cogentine)

NB:
- Antidepressants: all suppress libido, erectn, ejac. except Trazodone.
- Anxiolytics: diazepam & lorazepam -- ejac; no effect on libido, erectn.
- Flurazepam → ↑↑ libido, no effect on E.
- Buspiron → enhance all.
- Antipsychotics → all suppressive.

Treatment of ED

1. Pharmaco therapy < Systemic / Topical
2. ICI
3. VED
4. Surgical (Penile implants)

Pharmaco therapy

→ Musts:
① Psychological component must be functioning
② Suitable for pt. not interested for searching for ED cause or invasive Rx.

Systemic

- [A] Centrally acting — ③ Apomorphine, Melanotan, opioid antagonists
- [B] Centrally & Peripherally acting — ③ Yohimbine, Trazodone, phentolamine
- [C] Peripherally acting — ② PDEIs, L-arginine (NO donors)
- [D] Hormonal — ② Androgens, Anti PRL

Topical

- Transdermal
- Intra-urethral (MUSE)

Apomorphine, Melanotan, opioid ant.

[A] Centrally Acting drugs

(1) Apomorphine (Uprima®):

- Mechanism → Dopamine Agonist (++ D2 Rs in Hypothalamus)
- Dose: 4-6 mg Sublingual (orally not effective)
- Efficacy: success response 70%
  - promise to become most effective Rx for ED (specially psych)
  - Tested & No dependant
- S.E: Nusea, Vomiting, Yawing

(103) ② Melanotan II (Palatin) ®

• Mech. → (Melanocortin Rs. Agonist) (has Melanocortin like action)

• Melanocortins < α MSH · Adrenocortic trophin (ACTH)

• Both regulate sexual behaviour & motivation Erection.

• acts mainly on MCRs 3 & 4.

• Efficacy: ↑ desire
↑ Erection.

③ Naltrexone:

• Mech. → (opiates Antagonist)

• Note opiates -- < Sexual drive · performance · GnRH

• Efficacy: some studies supported its efficacy in improving Erection in (Idiopathic ED. while other studies (didn't support) But in both studies it (↑ NPT.)

• Recommend: used in ED & altered Central opioid tone.

④ Nalmefene:

• Mechanism: long acting opioid Antagonist (derived from Naltrexone) → (++ Axis) activity → (↑ LH, FSH & T) (but no change in NPT)

109 [B] Centrally & peripherally Acting

1. Yohimbine

Mech. ① α2 Blocker < Centrally → Erect. / peripherally → Relaxat. of vascular & Corporeal smooth m.

② ↑ eNO.

③ ++ desire → so aphrodiasic Effect.

(ع شغل: . Central . peripheral . eNO . ++ desire)

dose: 10 mg three times / day. [30 mg /d]

طريقة الاستعمال N Δ:

Δ1 ondemand → قبل العلاقة الجنسية

Δ2 Continous → يستعمل يوميا (والبعض بينصح انه لابد من استعماله يوميا لمدة ٨ اسابيع عشان يبتدي يجيب نتيجة كويسة)

improvement erection occur mainly in Pt. c psychogenic ED

لا ينصح به لأنه ...

خارج الروشتة: لبعض شكاوي كويس، أنا فرحح. Trittico tab.

S.E
- Headache.
- Insomnia.
- Tremors
- Palpitat.
- HTN. (marginal ↑ in diastolic).

Serotonin -- sexual fun.

2. TraZodone (trittico <50/100 tab)®

Non TCA Serotonin antagonist & Reuptake inhibitor. class of antidepressant

Mech. Exact mechanism is unknown but ±: عالجت depression

< Centrally → Serotonin agonist → ↓ Erect.
< Peripherally → α blocker → sympathetic → Erect
→ Serotonin Antagonist → Erect.

- dose: 50 - 100 mg/d
- S.E: . sedation
  . orthostatic HypoTN.
  . priapism
- Efficacy: (Controversy):
  . success rate (60%)
  . good in pt. ↓ ED+ Anxiety or depression
  . Recent study → Not effective.
- Note Trittico < large dose → -- Erection (Serotonin Agonist).
  Small dose → ++ Erection. (α-Blocker & Serotonin Antagonist.)

3. Phentolamine (Vasomax)

- α Blockers (α_1 & α_2) → sympathetholytic → ↑ erection
- dose: 50 - 100 mg/d at bed time
- S.E:
  - HypoTN
  - Nausea
  - Vomiting
  - drowsiness
  - lethargy

- C. Peripherally Acting
  1. PDEIs < Selective / Non selective
  2. NO donor (L-arginine)

(I) Selective phosphodiesterase Inhibitors:

1/06

1. Sildenafil [Viagra]®
2. Tadalafil [Cialis]®
3. Vardenafil [Levitra]®

• **Mechanism of Act:**

Sexual stimulation

↓

↑ NO

مثير sexual + حالشى

Viagra لزمن

Erotic Stimuli < visual, audio, Tactile, Imaginary

↓

++ Higher supraspinal Sex Centers (at < limbic system, Hypothalamus)

↓

release of:

- Dopamine
- oxytocin
- Serotonin & NE (partly)
- NO
- αMSH
- ACTH

↓

++ S2,3,4 parasympathetic Spinal Center

↓

Parasympathetic N. fibers

↓ divide into:

Cholinergic Nerve Terminals

↓

ends at Endothelium of C.C

↓

A. Choline release

↓

++ eNO synthase enz. → (NO) → يكسر PDE →

Non Cholinergic Non adrenergic Nerve Terminals (NCNA)

↓

Ends at Cavernous Smooth ms:

- PGE1
- VIP
- CGRP

NO

↓

Smooth ms relaxat^ through

- cAMP → ↓ intra cellular Ca+ → relaxat^ ↓ Erect^
- cGMP

these are the Active 2nd Massenger in Smooth ms. relaxat^ & Erect^.

They are inactivated (destructed) by PDE

PDE enz has Main 11 ISo forms:

- → PDE 1, 2, 3, 10, 11 → -- cAMP & cGMP
- → PDE 4, 7, 8. → -- cAMP.
- → PDE 5, 6, 9 → -- cGMP.

PDE5 present in:
1. penis inhibit: #of ED
2. Lung Inhibit → #of Pulm. HTN

Viagra is a slective PDE5-Inhibitor → ↑ cGMP → Erect^

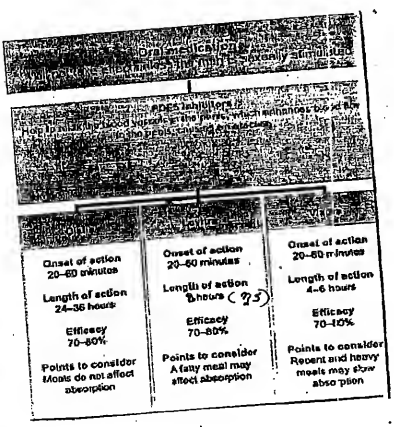
↓ in retina

also weak PDE6-I → ocular S.E.

- Pharmacokinetics & Dose

50-200 mg 1 before coitus by ≃ empty stomach 0.5-4 hrs (average 1hr) → onset of act^ è 20 mn [Maximum 0.5-2 hrs) → act^ that may extend For upto ≥ 24 hrs.

Durat^ of: Efficacy 4 hrs. U-b



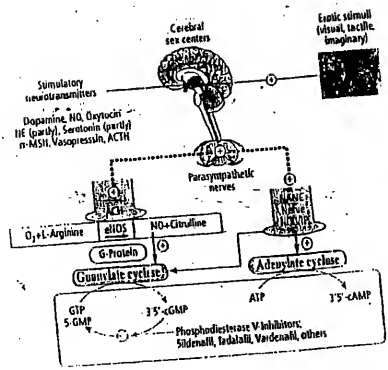
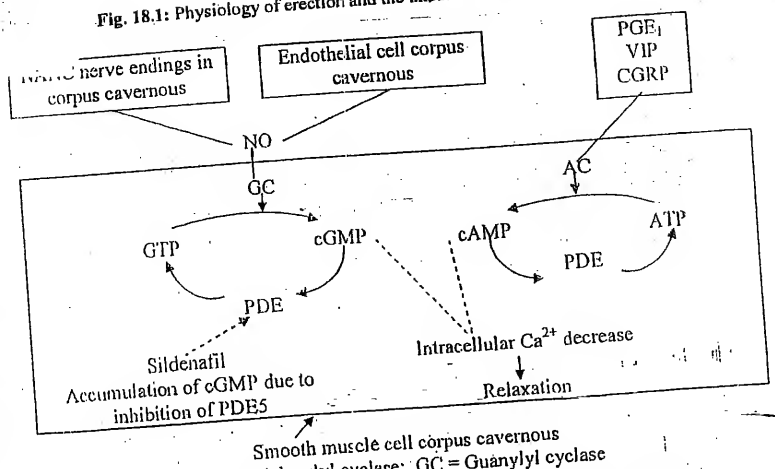


Fig. 18.1: Physiology of erection and the impact of PDE [illegible] erection



AC = Adenylyl cyclase; GC = Guanylyl cyclase

Fig. 18.2: Cellular mechanism of erection in the cavernous smooth muscle cell.

log

Kinetics

- Rapid absorption after oral intake. ✓ (Fatty meal ↓ extent of Abs. by 29%)
- Maximal plasma conc. (30 - 120 mins)
- Metabolized in liver & Excreted in feces (80%) & urine (13%)

Empty Stomach

. Therapeutic effects:

1. Sild. is Erection Enhancer Rather than erection Inducer (not aphrodisiac; so sexual excitation Required). NO

2. Efficacy in different Conditions:
   - a. NL individuals → no effect on erection
   - b. Psychogenic ED → 88% (ē Regular use) & 92% (on demand use) — placebo was (38%); placebo (27%)
   - c. organic ED → obvious but < Psychogenic
   - d. Mixed org. & psychog. → 78% (placebo 29%)
   - e. SCI → 65 - 80%
   - f. Diabetic → 57% (placebo 10%)
   - g. Radical prostatectomy → 43%

(So it is the most effective & promising drug in treatment of ED)

S.E — Few; ē Higher doses (100 - 200 mg); rarely requires stop of The drug.

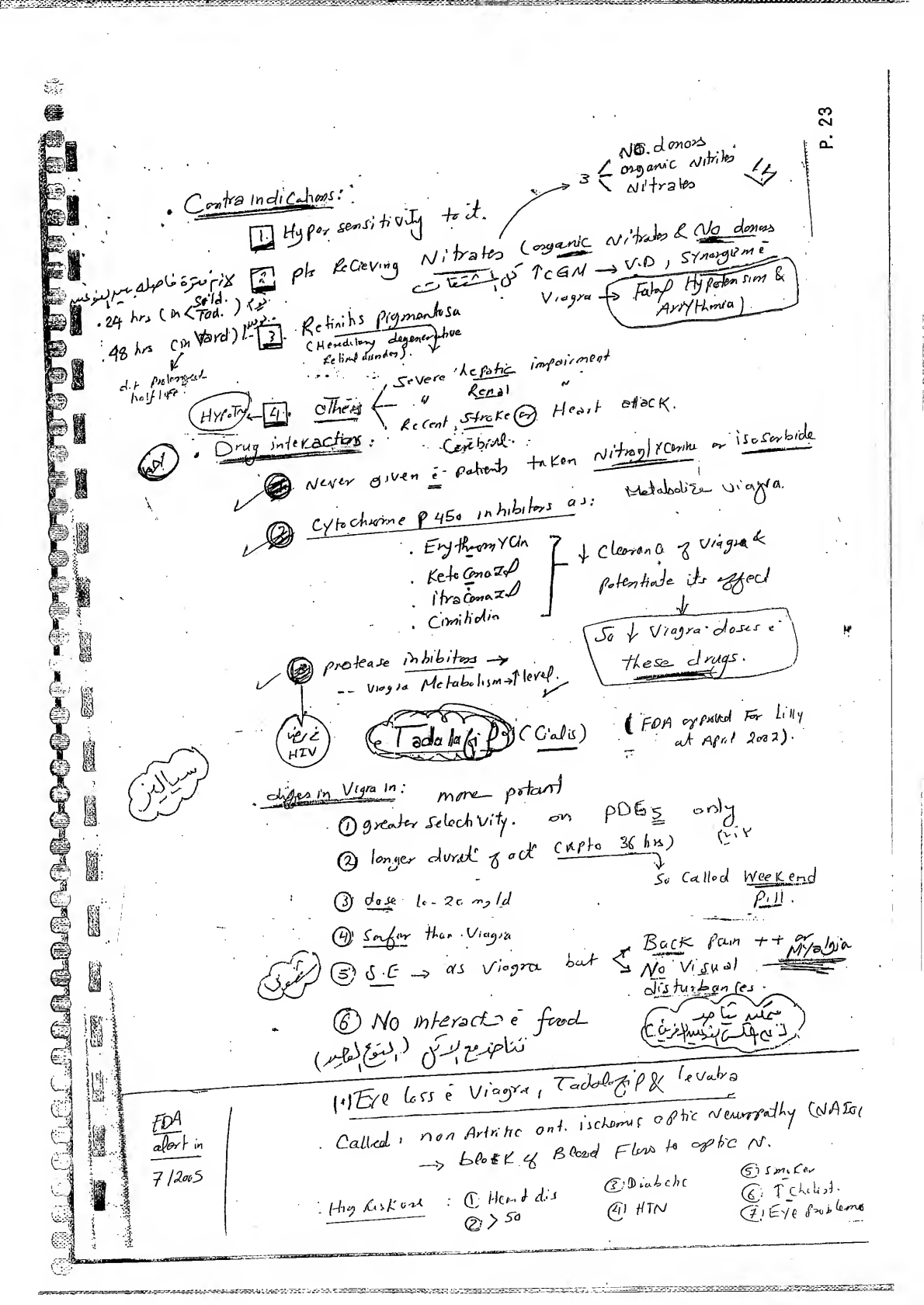
(A) Common not-serious:
1. Headache
2. Facial Flushing
3. Dyspepsia
(4) ...
5. Visual disturbances

d.t effect of VD — PDE5 in tissues

- a. blurring
- b. loss of peripheral vision
- c. Color blindness
- d. ↑ IOP intraocular pressure
- e. Non arteritic Ant. Ischemic optic neuropathy (sugg. by many stu...)

Some users experience these S.E — FDA 2005 Alert

(B) Rare but Serious:
1. Priapism
2. sever Hypotension
3. M.I
4. arrythmia
5. Stroke
6. Visual impairment (NAION)



FDA alert in 7/2005

1) Eye loss of Viagra, Tadalafil & levatra

. Called: non Arthritic ant. ischemic optic Neuropathy (NAION)
→ block of Blood Flow to optic N.

Hig Risk of: ① Heart dis ② > 50 ③ Diabetic ④ HTN ⑤ Smoker ⑥ Cholest. ⑦ Eye problems

112

Vardenafil (Levitra)® (Bayer)

differ From Viagra ① More potent & more selective on PDE5
② More Safe
③ dose: 10-20mg
④ half life (5 hr) [duration of efficacy 8+?]
⑤ S.E →

onset.
Vardenafil > Viagra > Tadal.

• Other uses of PDEIs:

1. Raynaud's phenomenon
2. prevention of stuttering priapism.
3. Pulmonary HTN.
4. premature ejaculation

II. Nonselective phospho diesterase (1-2 g/d (or) 1200 mg/d For 12 ws)

Trental ⇒ Inhibitors (Pentoxifylline)

- Some pts Receiving it For Ischemia showed improved Sexual Function by VD
- the studies: showed its effectiveness.

Mechanism ↓ Viscosity
↑ RBCs Flexibility ++
↑ peripheral Flow

Good response if Combined with Yohimbine

(N.B.)

② NO donors (L. arginine) 2 studies

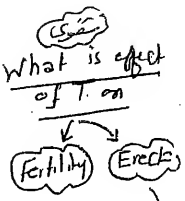
- 2800 mg/d For 2ws → improve 40%] only on those
- 5000 mg/d For 6 ws → " 31%] of low level of (NO)
- " ck, cer "

Gentoplex = Fish Roe + Ginkgo-biloba extract → improve sexual desire & ↑ blood Flow.

L-arginine → NO

D. Hormonal ##

What is effect of T on



① Androgen therapy

indications:

a. ↓ libido
b. Severe Hypogenadism
c. Adjuvant ## when other drugs are unsuccessful by themselves.

Mech.
1. ↑ libido & sense of well being
2. Improve penile vascularity.
3. regulate → PDE5 activity (↓/↑).

HL
in Recent study: pt. ē low or low N L T level who Failed response to PDE5I (Viagra = PDE5I non responder) → TRT give +ve results.
(So altered level may alter PDE5 Expression

⊙ Supraphysiological level of T may:
- ↑ desire
- No effect in Frequency of sex.

HL
(X) threshold For this alteration:
- Total: ≤ 10-13 nmol/L
- Free ≤ 200-250 pmol/L

- Forms & doses → See TRT

② Antiprolactin:

↓

Hyperprolactinemia is ass.ē:
- ED
- ↓libido
- Gynecomastia
- Hypogonadism

PDE System

1/9

- Number : 11 Families & total Number of > 50 Isoforms.
- Funct: acting on the (second) Messengers < cAMP / cGMP
  → hydrolyze the phosphodiesterase bond →
  breakdown of < cAMP → to c ATP / cGMP → S.GMP [biologically inactive Monophosphates]
  → ↑ intracellular Ca++ →
  Smooth ms Control → Flaccidity.

- Sites: Heart, Lung, Kidney, Retina, Vascular & Visceral Smooth ms, Testis & ovary.

- What are Types of PDE present in Cavernous Tissue??
  - PDEs → most abundant
  - other Types:
    - PDE 1: < A / B / C [also present in < CVS / CNS / vascular Sm. m. → . Headache . Flushing . Tachycardia
    - PDE 2: A
    - PDE 3: A
    - PDE 4: A, B, C, D
    - PDE 7A, 8A, 9A, 10A

(6 types)

- PDE 4 & 5 inhibitors: -- Migrat^ & prolif. of smooth. m.
- PDE 3 & 4 inhibitors: ↓ restenosis after angioplasty procedures (so) they are undertrial for their potential Angiogenic effects.

PDE-I

Chronic daily dosing

adv.

1. Effective in the following conditions:
   - PDE-I Non responders.
   - Sexual rehabilitation of pts. after Nerve sparing radical prostatectomy.
   - EDF CV risk factors.
2. Improves Endothelial dysfunction (of C.C & all body endoth.)
3. improving Voiding difficulties in BP pt (as PDEs are widely distributed in prostate)
4. relieves the patient from scheduling sexual activities.

on demand use

20 mg before coitus
½ - 4 hr
not < 2 hr
for 4 hr

PDE-I Non responders:

Definition of them: [real non responders]:

- Failure of response to PDE-I under the following conditions:

1. use of at least 4 tablets of highest dose Max dose
2. At 4 different occasions.
3. under optimal conditions & appropriate
   - Sexual Stim.
   - Interval between

1/8

- To overcome this problem, Measures that can be done are:

(1) Use High dose → doubling the Maximum dose. (100)

(2) Shifting to another Type of PDE5I : From Sildenafil to Vardenafil

(3) Daily Dosing.

(4) Treatment of Concomitant

(A) Hypogonadism : Testosterone
- regulates PDE-5 expression
- regulates PDE-5 responsiveness to the inhibitors.
- Cavernous VD.

[PDE-I non responders] (±) a sign of Hypogonadism

(B) HTN, Hypercholesterolemia & DM.

Comparision bet PGE1 & Sildenafil

	PGE1	Sildenafil
	Invasive	non Invasive
	No need for sexual Stim.	Needed
Excr. onset: 10-15 min.		60 min.
Mech.	↑Tc AMP	↑cGMP
Type of Excr.	Induced (non physiologi-cal)	Spontaneous
Use in ED:	2nd line.	1st line.

NB Newer PDE5I → (161)

Topical Pharmacotherapy

A. Transdermal
B. Intra Urethral (MUSE)

A. Transdermal

① Nitroglycerine
② Minoxidil
③ papaverine

① Nitroglycerine:

Mechanism → Release NO.
→ binds to Guanylate Cyclase System → ↑cGMP → ... muscle Relaxation ∴ erection

used as 2% ointment / patch to penis & perineum.

studies ① improve erection (but) not Rigidity
② better in pts ∵ SCI

limitation: Poor absorption through the thick tunica → So some make window in Buck's Facia & Tunica Albuginea & cover it ∵ blood from deep dorsal vein & oint. applied overskin

S.E: Headach & Hypotension in both partners.

② Minoxidil:

Mech. → K Channel (opener) → Ca entry inside cells → Relaxation & penile erection

used as: 1 mg, 2% sol. (capsicum)

Better when: Combined ∵ Capsicum → enhance Abs.

③ Papaverine gel (15-20%) →

improve ED (in) SCI. Cases

PDEI ⊕ ↑ cAMP

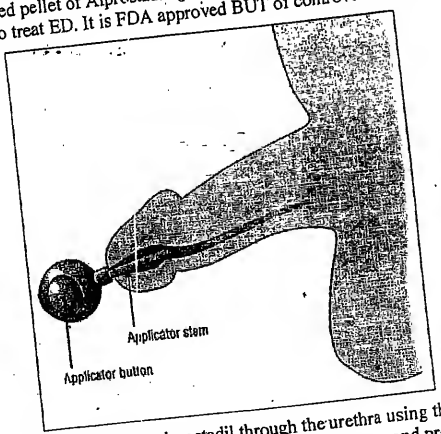
Alprostadil

B intraurethral

MEDICATED URETHRAL SYSTEM FOR ERECTION

(MUSE)

MUSE is short for "medicated urethral system for erection." It consists of a tiny medicated pellet of Alprostadil (prostaglandin E1) that is inserted into the urethra to treat ED. It is FDA approved BUT of controversial results.



Administration of the drug alprostadil through the urethra using the MUSE system is an effective alternative treatment for many men, and provides a less invasive alternative to intrapenile injection.)

Alprostadil is a prostaglandin E preparation in a pellet form that is inserted with a plunger-like mechanism into the urethral opening. The plunger device is a thin plastic tube with a button at the top.

Mechanism: through delievering PGE1 into the urethra mucosa (good absorption incontrast to poor absorption through tunica)→ absorption to C. spongiosum then to C.cavernosum (due to venous communication between them).

What is mechanism of PGE1(يكتب)

↑ cAmp → ↓ intracell Ca. → relaxation

119

. Apparatus : Formed of 2 Parts .

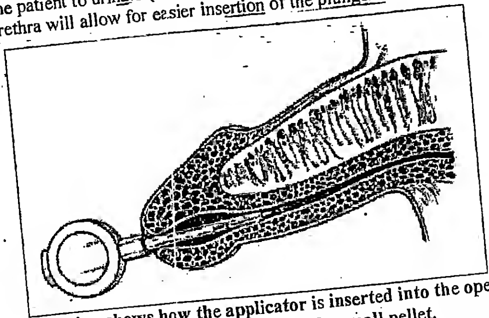
2 plastic tube .

A. **Plunger(المكبس)**

The plunger device is pre-filled to deliver a pellet about an inch deep into the urethra at the tip of the penis.

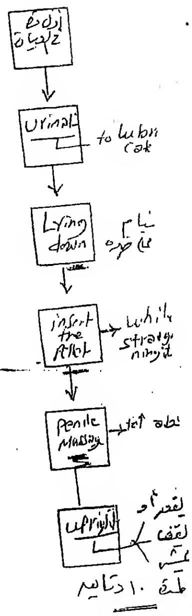
Method :

* Using a plunger device ,PGE1 is inserted into the urethral opening. The plunger device is a thin plastic tube with a button at the top.
* Ask the patient to urinate (because lubricants should not be used and a moist urethra will allow for easier insertion of the plunger device).



This illustration shows how the applicator is inserted into the opening at the end of the penis to leave the small pellet.

* Insert the tube about 1 inch into the urethral opening and press the button → A pellet containing the drug is released.
* After insertion, the pellet within the urethra should be dissolved by massaging or "kneading" the penis for about a minute.
* To avoid discomfort, keep the penis as straight as possible during administration. Roll the penis between his hands for 10 to 30 seconds to evenly distribute the drug.
* Avoid Urinating or urine leakage right after administration (may reduce the amount of medication).
* the patient is asked to get upright(either sitting, standing or walking for about 10 minutes after administration, If you lie on your back too soon after administration, blood flow to the penis may decrease and the erection may be lost).
* Erection will be achieved that lasts between 30 to 60 minutes. The erection may continue after orgasm.



. Dose : [• Start c̄ 500 Mg & then either ↑↑ or ↓↓ The dose according to the response .
• Not ≥ 1 - 2 times / day.

. SE : (1) Pain (testicular or penile)
(2) Burning sensation & Bleeding
(3) Hypotension
(4) SE of PGE → priapism or fibrosis .

NB: IF significant symptoms of hypotension Symptoms include dizziness, lightheadedness, and fainting. If these symptoms occur, the man should lie down immediately with his legs raised.

5) Female SE: *Vaginal burning or itching OR TOXIC EFFECT ON FETUS (if she is pregnant)

* One of the more unusual side effects involved a case where the MUSE pellet became caught in a female partner's mouth during oral sex and created an allergic reaction which necessitated a trip to the emergency room. For this reason, oral sex is not recommended when using the MUSE system..

Contra-Indications:

1- Blood coagulopathy or using anticoagulants.
2- if the female is pregnant or is likely to get pregnant (use condom) teratogenic
3- hypersensitivity to prostaglandin, and sickle cell anemia.
4- Abnormal penal anatomy
5- Taking certain cold and allergy remedies may offset the effects of the MUSE-administered drug

Efficacy(فعالية)

The Medicated Urethral System for Erection study group -(M.U.S.E.) have mentioned good results with the use of transurethral alprostadil, in a pioneer study; 64,9% of patients had sexual intercourse at home, regardless of impotence etiology and their age, with only 5,1% of discreet urethral traumas. However, 32,7% of the patients mentioned pain after the transurethral application. More recently, Porst reported that 43% of patients treated with 1000mcg of transurethral alprostadil were able to have a sexual intercourse, but only 10% mentioned rigid erection. Similarly, Werthmam and Rajfer obtained 30% of erections that enabled vaginal penetration, but only 7% of 100 patients using up to 1000mcg of alprostadil mentioned rigid erections.

In another study, the efficacy of intraurethral alprostadil was evaluated in a double-blind, placebo-controlled trial in 1511 men with chronic erectile dysfunction from a variety of organic causes. Two-third of these men responded to intraurethral alprostadil with an erection sufficient for intercourse in the clinic; these men were then randomly assigned to therapy with either alprostadil or placebo. Successful intercourse on at least one occasion was much more likely with alprostadil (65 versus 19 percent with placebo). Among the men who responded to alprostadil, 7 of 10 applications were followed by successful intercourse.

*In one study, 65% of men achieved erection using MUSE, and these men achieved intercourse in an average of 7 out of 10 administrations. A more recent study, however, reported disappointing results, with only 27% achieving erections and only 18% requesting additional refills.

(diabetes mellitus)
في صد دابيوس

ICI
(Intra Cavernosal = Intracorporeal injection)

Def. Diagnostic & therapeutic method for ED / based on direct injection of drugs into Corpora Cavernosa.

- There are 3 main drugs used:

	Papaverine	Phentolamine	Prostaglandin E1 (PGE1)
Mechanism	Non selective PDE inh. → ↑cAMP & cGMP	α Blocker → relaxation (α1 & α2)	(1) ++ Adenyl cyclase → ↑cAMP (2) -- Collagenase (TGF-β) enz. (No fibrosis) (3) -- Platelet aggregation
Half life:	1–2 hrs	0.5 hr 30 min	< 1 min
Metabolism	by liver	Extensive Hepatic ↓ Metab. before Exc.	90% Metabolized in a single pass through lung.
Preparation	"Papaverine" الامبول فيه ٦٠ مجم	"Rigitin"® الأمبول اللي فيه ١٠ مجم	Alprostadil® Caverject® الامبول اللي فيه ٥٠ ميكرو
S.E / disadv. (main) (disadv.)	Fibrosis (Peyronie's) Priapism Hypotension	Tumescence (not rigidity) Hypotension Tachycardia	Pain less common fibrosis.

NB:
- PGE1: is the most efficient, less S.E & ! only FDA approved.
- Andropen: Autoinjection device PGE1 — زي قلم السكر كبير بس جرعة عالية للاستخدام المنزلي

(حرارة)

- other less commonly used drugs: لا تستعمل فعليا.
  - CGRP
  - VIP
  - Na-Nitroprusside.

Doses & preparations: [1] when using single Agent:

- Papaverine: 30-120 mg (usually 30-60) — ½ امبول - ٢ امبول
- Phentolamine: 0.5-1 mg — 1/10 امبول
- PGE: 10-20 Mg. — ٤/٢ سم من الامبول

[2] Using Combination:

Bimex (ثنائي)

Regitine + papaverine (1:30 mg)
(1 mg) + (30 mg)
↓
priapism

NB phentolamine ± replaced by Chlorpromazine.

Trimex (ثلاثي)

PGE1 (500) 0.05 ml (1/10 امبول)
+
Papaverine (45) 2.5 ml
+
phentolamine (5) 0.5 ml
+
Saline 1.2 ml
(4.25 ml)
↓
dose 0.25 ml - 1 ml

Quadrimex

1/5 امبول (100 µg)
+
٥/٤ امبول (270 mg)
+
٢ امبول (20 mg)
+
Atropine ٤ امبول (4 mg)
(١ امبول أحسن)
↓
dose: 0.1 - 1 ml
↓
Better to be avoided for fear of severe cardiac collapse.

> **NB**
> The best used single Agent is: PGE while the best of all (single or combination) is (Trimex) or Goldstein Sol.

- other less Commonly Used drugs: الأدوية الأقل استخداماً

  - CGRP
  - VIP
  - Na. Nitroprussiide.

Dosage & preparations: 1 When using Single Agent:

- Papaverine: 30-120 mg (usually 30-60) — أمبول ½
- Phentolamine: 0.5-1 mg — أمبول ½
- PGE: 10-20 µg — أمبول ½

2 Using Combinations:

Bimex (ثنائي)

Papaverine (1:30 mg) + Regitine (1 mg) (30 mg)

↓

priapism

NB phentolamine ± replaced by Chlorpromazine.

Trimex (ثلاثي)

PGE1 (50 µg) 0.05 ml (½ أمبول)
+ Papaverine (75) 2.5 ml
+ phentolamine (5) 0.5 ml
+ Saline 1-2 ml
(4.25 ml)

↓

dose 0.25 ml - 1 ml

Quadrimex (رباعي)

½ أمبول (100 µg)
+ أمبول (270 mg)
+ أمبول (20 mg)
+ أمبول (4 mg) Atropine
(1 ml)

↓

dose: 0.1 - 1 ml

↓

- Better to be avoided For Fear of severe Cardiac Complications.

NB
The Best used Single Agent is: PGE while the best of all (Single or Combination) is Trimex or Goldstein Sof.

Andrigen: زي تسليم نظيف منه جرعة معايرة

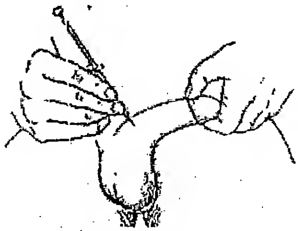
TECHNIQUE OF ICI

either By → Andrigen / insulin Syringe

① Use injection site as illustrated. This area is designated on the drawing with the crosshatch marks. & rubber band is put at base of penis to ↓↓ escape of drug to circulation.

→ at base of penis

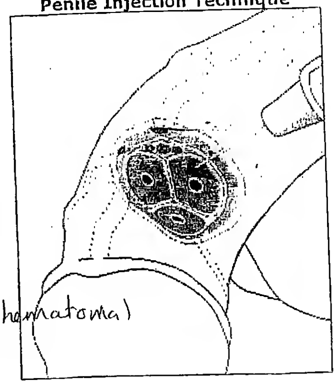
② Locate the area of injection. Wipe off with an alcohol swab. Grasp the head of the penis, not the skin. Position the penis along your inner thigh. Maintain traction on the head after cleaning the side of the penis



③ Grasp the syringe between the thumb and middle finger like a pen. Place the needle on the site of injection at a 90 degree angle. Push the needle in, gently but firmly, all the way down to the hub.

تحقن ببطء على مدار ١٠ ثواني

Penile Injection Technique



④ Site of inj.

- at dorsolat aspect of base at 2 & 10 O'clock
- avoid inj. at <
  - 6 O'clock → urethr. injury
  - 12 O'clock → Penile aa & Ns injury.
  - 3 → at septum (haematoma)
- during inject: 2 resistance sites are felt: at skin & Tunica.
- if persistent resistant → Indicate that the needle cross the opposite side of Tunica (Septum).

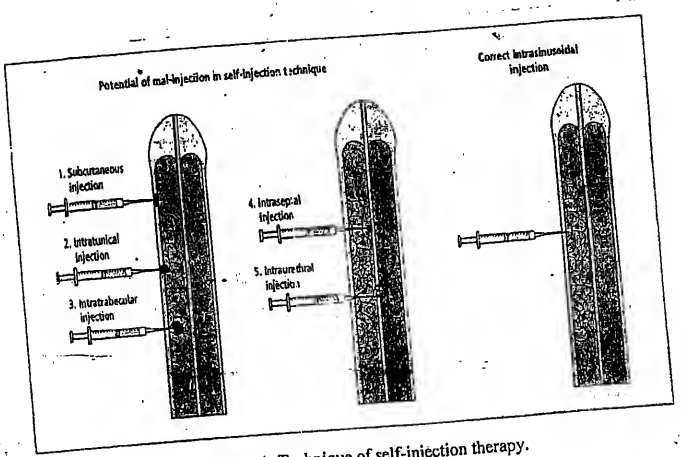
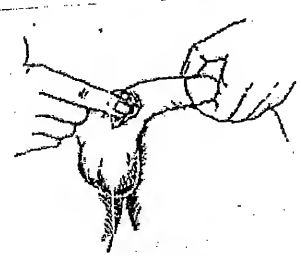


Fig. 18.4: Technique of self-injection therapy.



6. Remove the needle. Apply pressure with your index finger on the injection site and your thumb on the opposite side of the penis. Apply pressure for 2 minutes. (or 7 mins in Coagulopathy pt).

↓

Evaluate of response

(تقييم الاستجابة)

- E_0 = No response
- E_1 = Elongate
- E_2 = Partial Tumescence
- E_3 = Full ✓
- E_4 = Partial Rigidity
- ✓ E_5 = Full ✓

(Max Erection)

NB:

① 2 should be combined ICI testing < CIS ?? pelvic exercise

② if used as therapeutic,
- Not > 3 times/W or 1/day

Interpretation of the test → See Antirejection ED

Indications of ICI

Diagnostic for:

1. ED : to diff. bet organic & psychogenic
   - rapid, simple, cost effective
2. PD : to detect the penile deviation
3. Combined with other diagnostic tests
   - PPDU
   - Arteriography
   - Cavernosography
   - Cavernosometry.

Therapeutic — ED, PE

[very effective Nearly in all Types of ED]

① Psychogenic ED :
relieve performance anxiety & restore spont. Erection

② Organic ED :
(program of precoital self inj.) ± followed by spont Erection ??
- ↓performance anxiety
- Good tissue oxygenation

③ used in # of P.E
(see PE).
premature ejaculation

Contraindications

- Intolerance to Hypotension
- Severe psychiatric illness
- ✓ Poor vision or Manual deterity
- ✓ Morbid obesity → difficult to inject
- Anticoagulant ## (relative C.I)
- ✓ Glaucoma & BP (Papaverine)
- ✓ Severe
  - systemic dis
  - Blood dis
  - Vasogenic ED
  - PD.

§ = Hypotension
- Coagulopathy
- Glaucoma

Complications of ICT

(1) Prolonged Erection & Priapism — [incid.] PGE1 (1%) (Papaverine) (10%), Bimix (7%) — Suitable dose; ↓ dose; use PGE; أوائل

priapism ← (1)
- Ischaemic → Veno-occlusive → injury
- Non-Ischaemic — How?? → arteriogenic

(2) Pain: Common ē PGE1 (add Procain)
- mild & don't interfer ē course
- only 3% discontinue d/t this pain

(3) Fibrosis: most serious & late complicat.
- incid. → PGE (1%) [why: --- TGFβ → -- Fibrosis]
- → (papav) (12%) [why?? d/t acidity of papaverine → ppt at alkalinity of blood → Fibrosis]
- proper technique ↓ it

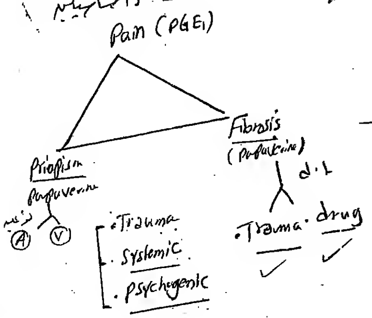
if occur → Stop it for 2m for possible spont. improvem. then repeat inj. again under proper clinical & sonographic follow up.

↓

if no spont. improvem. &/or there is Tachyphylaxis

↓

Stop ICT & shift to another line.



(4) Faulty inject: → trauma
- injury of: Urethra, Neurovasc. bundle, Sinusoidal walls, Corporal septum → hematoma & late fibrosis

(5) Systemic Complications
- ✓ Hypotension (d.t systemic abs) more ē phentolamine / papaverine / venogenic imp.
- ✓ Hepatotoxicity (" " " of papaverine)
- ✓ Tachycardia

(6) Psychogenic Complicats: lack of satisfact. d.t
- ✓ (1) Anxiety about inject. pain & complicat.
- ✓ (2) " " artificial nature of erect.

VCD (Vacuum Constriction Devices)

Indicat: organic ED ē Refusion of implant or ICI

structure: 3 basic elements

- **Vacuum Chamber (Cylinder)**
  جهاز أسطواني مكرم للتضيب علشان مش كيحل تسريح القضيب
- **Negative pressure pump.**
  Connected to the cylinder → -ve pressure → Rushing of Blood to Fill cavernous tissue (erection like state; NOT True erect as there's no dilatat of cav. Tissue.)
- **Tension Rubber band**
  Moved along the cylinder to base of penis to entrap Blood into it. (then) Chamber removed & Coitus started
  [band not apply to base > 30 → isch]

Complicat:

1. Pain & Ecchymosis
2. Pulling of scrotal skin into vacuum cylinder (if large sized)
3. Cation ē Blood dis. & Coagulopathy
4. -- of Ejaculat (by ring on base of penis)

Advantage: minimal invasion & complication. so → ± preferred by many patients.

Disadvantage: (1) lack of spont. Erect
(2) dissatisfaction

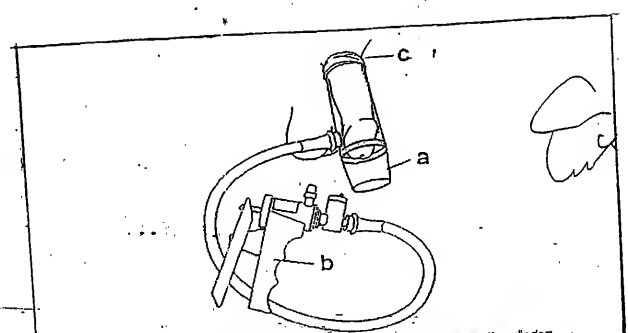


Figure 7-20: Components of a vacuum constrictor device: (a) a plastic cylinder; (b) a pump; and (c) an elastic (constrictor ring).

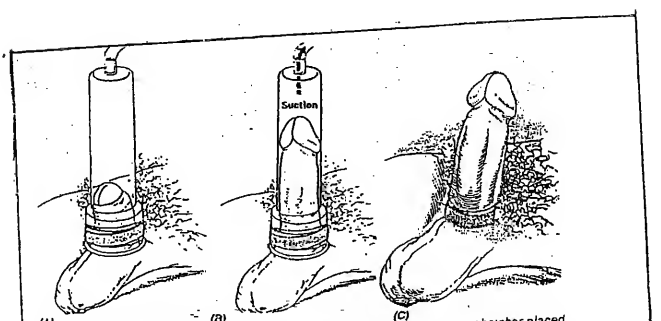


Figure 7-21: Mechanism of action of vacuum devices. (A) Negative pressure chamber placed over penis; (B) vacuum pulls blood into penis to produce tumescence; (C) tension band transferred from chamber to base of penis to entrap blood inside

Examples of vacuum devices available on the market:
- ErecAid system (Osbon Medical Systems, Ltd., Augusta, GA).
- Post-T-Vac vacuum therapy (Post-T-Vac, Dogde City, KS).
- Response/touch vacuum constriction (Mentor, Goleta, CA).
- VED vacuum erection device (Mission Pharm, San Antinio, Tx).

121

Penile Prosthesis (Implant)

Indications: Any Patient ē ED &/or deviation (that Prevent inter Course) after forfure &/or unacceptance of other less invasive Measures as:

- . Oral Therapy
- . ICI
- . VCD

so Indications +

- . DM
- . RF
- . Neurogenic ED
- . Vasculogenic ED
- . Pyronies di
- . priapism
- . Psychogenic ED (after forfure of sex therapy & deep psychosis other Measures).

Types of penile Implants

- Soft Silicone
- Semirigid
  - Mechanical
  - Malleable
- Inflatable (Hydraulic)
  - 2 piece inflatable
  - 3 piece inflatable

122

1- Soft Silicone Implant

inserted in c-c.

indicated in spongy erectile tissue

Figure 6. Virilis soft silicone penile implant.

* Currently these devices are manufactured in France and sold under the names "SSDA" and "Virilis" in a number of countries.
* This implant is indicated in the presence of residual spongy erectile tissue which permits tumescence and complementary girth expansion around a central silicone support.

2- Simirigid

A- Mechanical:

articulating segmen held by central ring covered by Silicone. Jacked

Figure 5. Dura II mechanical penile implant

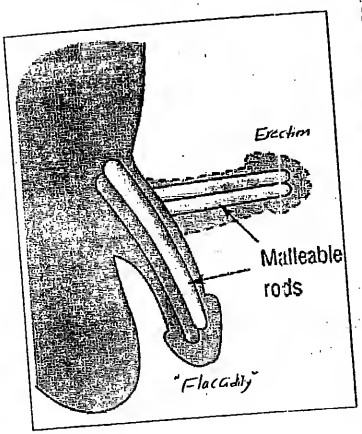
* *Structure*:articulating segments of polyethylene held together by a central spring and is now sold by American Medical Systems. (Figure 5) These articulating segments are covered by a polytetrafluoroethylene sleeve surrounded by a silicone outer jacket to prevent ingrowth of tissue into the prosthesis parts.

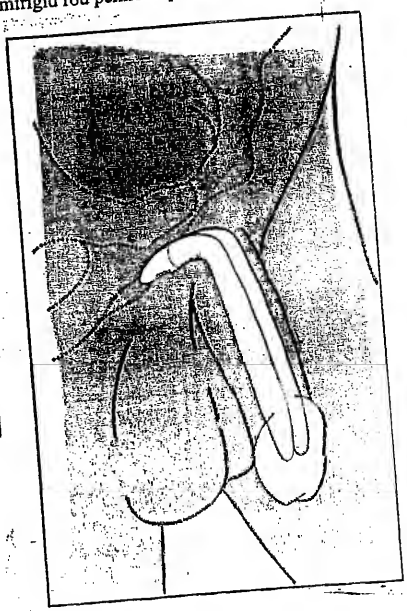
Advantage:1-better concealment (during day time activity).
2- no spring back after bending

Disadvantage: excessive bending may lead to damage. (rupture

A- Malleable (rigid enough for coitus and malleable for daytime concealment):

Figure 4. Accuform semirigid rod penile implant.





Structure: braided silver wire surrounded by a silicone coat.

→ *Advantage:* 1- cheap, easy implanted
2- less incidence of mechanical damage (less than inflatable)
3- suitable for Pyronie.

→ *Disadvantage:* 1- Penile flaccidity, concealment, and girth are not optimal.
2- More liable to eroslons in neurogInic ED.

The rods are usually placed through circumcision-like or penile-scrotal incisions.

3- Inflatable:

The Inflatable implant is a common penile prosthesis that's more physiological.

The Inflatable devices are either:

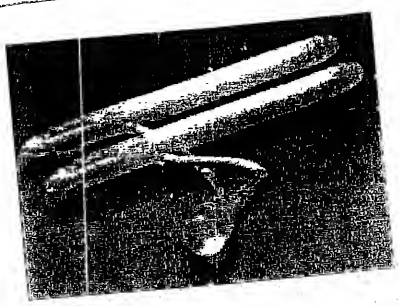
A- **One piece inflatable prosthesis (Dynaflex model):**

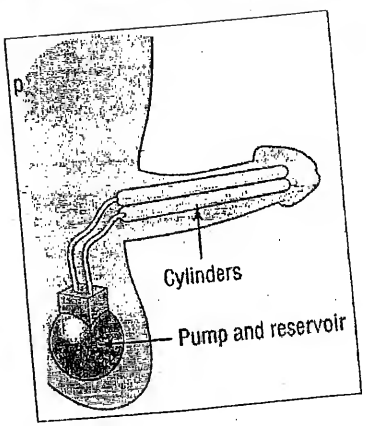
*Double roads device composed of 3 parts: proximal reservoir cavity, central mid chamber and distal pump at glans.

* when erection desired press the pump at glans → fluid transfer from the reservoir to the central mid chamber → inflation

* Deflation done by steady bending for 10 seconds → fluid will pass from the chamber to the reservoir.

B- **Two piece inflatable prosthesis**, the pump and reservoir are in the scrotum and are used to inflate the cylinders into the erect position. The cylinders are then deflated by pressing a valve at the base of the pump to return the fluid to the reservoir

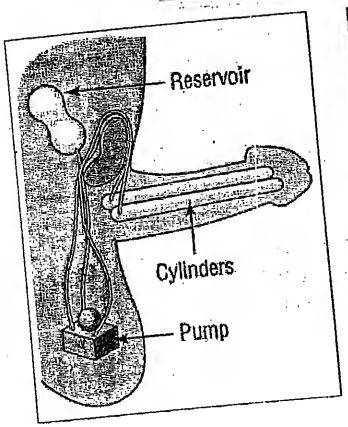


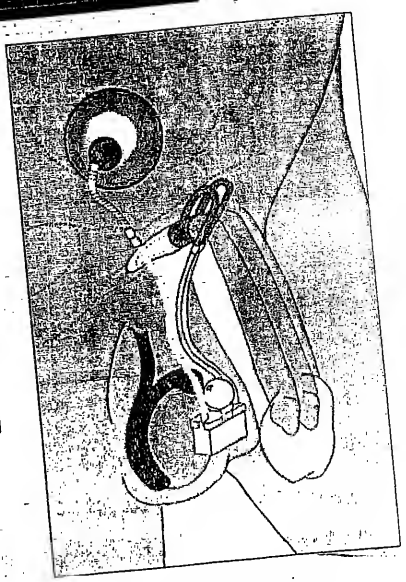


/25

Three piece inflatable prosthesis, the pump is in the scrotum and the reservoir is in the abdomen.

- pump → scrotum
- Reservoir → abd
- chamber cylinders → penile shaft





* Implantation of the multicomponent inflatable prosthesis requires placement of inflatable cylinders into each corpus, the reservoir into the perivesical or preperitoneal space, and the pump into the scrotum (on the right side for right-handed patients, on the left for the left-handed).

* This device connects through a tube to a flexible fluid reservoir and a pump. The pump is shaped like a testicle and inserted in the scrotum. When the pump is squeezed, the fluid is forced into the inflatable cylinders

26

implanted inside the penis, producing an erection.

* Both types increase in girth, and the three-piece devices also increase in length.

* The inflatable cylinders produce a more natural effect. The patient is able to simulate an erection by using a pump located in the scrotum.

* Two-piece systems are particularly useful for patients in whom placement of an abdominal reservoir would be difficult or impossible. They are also somewhat easier to place surgically, but produce approximately 80% to 85% of the girth change and rigidity of the three-piece unit and less flaccidity when deflated.

disadv. : damage.

• Basic Surgical Technique (procedure)

A) Strict Aseptic Conditions: أهم حاجة to prevent the most important & serious complication (inf.): ?:

1. Rx of any septic focus e.g. skin or UTI. "شاشة قبل العملية"
2. shaving / pubic area.
3. Antibiotics:

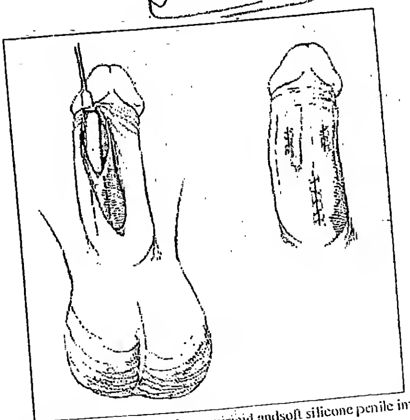
قبل العملية بساعة و لمدة ٤٨ ساعة بعد العملية و ذلك باستخدام
خليط من:

. Vancomycin + Gentamycin
or: Cephalosporines + Quinolones.

4. Continuous wound irrigation during operation.

B) Skin incision: ع ثلاث طرق

1. Dorsal subcoronal
2. Infra pubic.
3. Ventral (penoscrotal (الأفضل)):
   - less incid of (inf) & (scarring)
   - (good healing)



Ventral penile approach to placing semirigid andsoft silicone penile implants.

(C) Corporeal incision & dilatation:
- incise each Corpora longitudinally.
- Hegar dilator is introduced (#7 - #13)

(D) Insertion of prosthesis: suitable (sized) rods are inserted followed by closure.

(Op. age) Complications

- **Operative**
  - SST-deformity
  - injury to:
    - Urethra.
    - C. Cavernosa
    - C. Spongiosum
    - Penile Prosthesis.
- **Postoperative**
  - **Early**
    - Pain.
    - Infect.
    - Erosion
  - **Late**
    - Partner dissatisfaction
    - Survival of prosthesis.

(A) Operative Complications:

طائرة نقل أسرع من الصوت

(1) SST-Deformity (Supersonic Transport aircraft):
- inadequate dilatation of Corpora ~~dilatty~~ or too short rods insertion → flaccidity of glans over distal end of prosthesis → Pain &/or difficult intromission ← Downward curved.
- H: Approximation sutures bet. ~~dorsal~~ dorsal surface of penis & the subglandular Tunica to direct it dorsally.

(2) **Injury to:**

(i) Urethra: . usually distal in cases of difficult dilatation — pospone operation 1m
نأجل العملية لمدة شهر لحد ما تخف رتزرعنا ثاني
. M: الزرع تاني

(ii) C. Cavernosa: . d.t thin dilator or Forced dilatation against fibrotic areas.
. injury ±: → distal: → Extrusion of prosth.
→ Proximal: → Migration of prosthesis to perineum.
→ Septal: → Cross Perforation.

(iii) C. Spongiosum: . by surgery or Tight Dressing
. Common in diabetics & → ischemic Necrosis of ! Penis.

(iv) Penile prosthesis: → (damage).

(B) Postoperative Complications < Early . / Late .

(1.) **Early Complications:** (Pain - inf., Erosions):

(i) Pain: NLLY ↓ mild perineal Pain occurs e in 1st ; 2ms but if Severe or persistent. > 2ms ; indicating:
- Inf.
- Too long prosthesis (شيله)
- Diabetic Neuropathy.

(ii) Infection: (Most Serious & Important Complication)
. incid. : a6 - 0.98%
. Risk fb: [. DM ✓ / . Immunosupp ✓] [. UTI ✓ / . SCI ✓]

130

- Organism: Staph - E.Coli or Anaerobes
- C/P:
  - Persistent pain
  - Purulent discharge
  - Prosthetic Erosion
- Tt: Either prophylactic ((لا) سعيد) or
  - Curative (بطريقتين)

Curative →

- Remove the Implant & Put dressing + Antibiotics For (6ms) then ↓ (6ms) Delayed reimplantation
  → (S.E) → Fibrosis
- or
- Salvage or Rescue Technique: نشيل الجهاز ونحط Antibiotic + جهاز جديد ↓ successful (90%) No fibrosis.
  أشيله وأحط واحد جديد في نفس العملية مع مضاد حيوي

(iii) Erosions: incid ↑↑ ē:
- ↓ Sensation (DM)
- Urethral stricture
- Radiation
- Cs
- Semirigid Type.

② Late Complications: → Psychogenic
(i) Partner dissatisfaction: to avoid it:

لازم نشرح لهم شوية معلومات عن ED

- ED: ± treated ē oral, ICI, VCD.
- Orgasm: ± Need 1 Year to develop
- Penile length: ✓ شريحة يطول شوية عن الطبيعي

(ii) Survival of the Implant: 5% of inflatable Implants Needed to change after (5Y)
(iii) Mechanical Complications. damage

131.

Treatment of psychogenic ED

(4)

- Masters & Johnson Principles of Sex therapy
- Kaplan's principles of Sex therapy
- Behavioural therapy
- Physical lines of therapy

A. Basic principles

١٢ نقطة

B. Basic Technique

C. Specific Techniques

Masters & Johnson principles of sex therapy

A. Basic principles

(For all sexual dysfunctions)

١٢ معلومة مهمة عن الجنس

مثلاً oral / manual

1. العلاقة الجنسية لا تعني "intercourse" = فيه أشكال أخرى مثيرة ومشبعة
2. الجنس ليس شيء يفعله الرجل لإرضاء المرأة ولكنه شيء يفعله كلاهما لإرضاء بعضهما.
3. Many Culture < Ideas & Attitudes are misleading
4. the Causes of sexual dysf. are Common & are not usually related to deep Psychopathology.

132

5 قد لا يتم تحديد سبب Sexual dysf. بدقة، ولكن العلاج قد يكون ناجحاً.

6 Using Past feelings & behaviour to predict the underlying causes is not helpful as it may limit the freedom to change

7 There is NO : such thing as "uninvolved Partner" when Sexual dysf. exists.

8 مش من المفيد إلقاء اللوم على أحد من الطرفين على أنه سبب في فشل العلاقة الجنـ

9 Assuming Responsibility for one self rather than delegating this responsibility to one partener is often effective in correct° of Sexual dysf.

10 Sex is highly intimate form of Communicat° & highly related to other relationship so it is highly related aspects of relationship bet. partners.

11 developing the awareness of the feelings of the other Partner will improve their relationship.

12 وجود الطرفين أثناء جلسات العلاج يجعل المعالج أكثر قدرة على اكتشاف كثير من نواحي العلاقة بينهما.

133

(B). Basic Techniques (For all sexual dysf.)

↓

6 Basic points should be followed for all sexual dysf.:

[A] **Couple therapy:** essential in improving all aspects of their relationship.

[B] **Cotherapy (dual) therapy:**
* لابد من وجود 2 معالجين > ♂ للتعامل مع الزوج، ♀ " " الزوجة

وده بيسهل الاتصال بينهم وبالتالي الوصول إلى سبب المشاكل والخلافات بينهم

[C] **Coordinated therapy:**
التنسيق بين أخصائي نفسية وأخصائي تناسلية لأن ED سببه > Psychogenic + organic Factors.

[D] **Starting session:**
- detailed Hx taking (to detect sexual conflicts & wrong ideas)
- physical Exam.

[E] **Sexual Guiding & Education Session:**
- Correction of < Ideas, Attitudes, Behaviour — depending on data from the previous sessions.

[F] **Sensate Focus session:**

Idea: All sexual dysfunctions are associated with Anxiety of performance → Failure to perform (worsen the sexual dysf.) so → Vicious circle & more anxiety.

134

. Aim: Allowing → Gradual Sexual Exposure & to help the partners to concentrate on sexual (Sensations) & (Satisfaction) more than (Sexual Performance) → ↓ Performance Anxiety & Pressure.

. Method: "Sensate Focus Program":

Sensate Focus I

Partners are instructed to stimulate each other by:

- . Kissing
- . Petting
- . Caressing

with Complete Exclusion of genital Areas. They are instructed to concentrate mainly on satisfaction & pleasure & Free Communications so that each partner can guide the other one about the excitatory & inhibitory behaviour.

Sensate Focus II

The same instructions in the previous step without genital stim. is allowed but without intromission

© Specific Techniques
(For ED)

After Completion of Sensate Focus I & II

↓

Intromission is allowed if there is good Erect^ .. but if there is less rigid Erect^ the ♀ may gently ++ the penis

(to assure the ♂ that he can Assure his Erection many Times even after he lost it.)

↓ Then

Intromission in ♀ Superior Posit^ & she can guide penis in Side Vagina to ↓ performance pressure & anxiety helping him to stop his Spectator role about his Erect^

↓

Stop intercourse before orgasm & orgasm can be reached by manual stimulat^

↓

Intercourse in ♀ superior posit^ & reaching orgasm.

↓

Male superior position

135

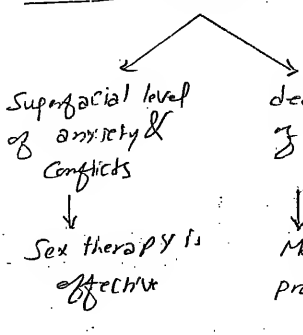
Kaplan's principles of Sex therapy

- She put similar principles of sex therapy

But she added:

1. Inhibited sexual desire Concept:
   - difficult to be treated
   - may be ass. ē deeply seated psychopathelogy.

2. Sexual problems caused by



Behavioural therapy

- depends on principles of Master & Johnsons. ē few differences as Concentrate on:
  - A. desensitization Technique → to ↓ anxiety
  - B. Relaxation Technique → ↓ Tension by specific Breathing Exercises

Physical therapies

- Viagra
- Yohimbin
- ICI

] Allowing him to do sexual intercourse → ↓ Anxiety & ↑ Confidence.

Ejaculation & its disorders

- physiology of Ejac.
- Disorders of Ejac.

① physiology of Ejaculation

- Def.
- Stimuli
- Neural Pathway
- phases

Def Neurophysiological reflex occuring simultaneously with Orgasmic Feeling.

Stimuli of Ejac.

Central (Cerebral) Stimuli

There are Cerebral Centers For Ejac.

Ejaculation may be:

stimulated by:

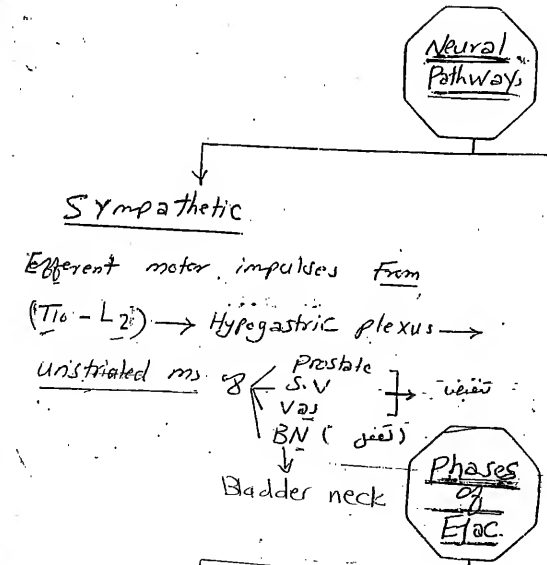
- stimulate ⊗ ↑ cerebral centers
- Sexual Fantasies imagination

Inhibited by

- Fears
- Psychic Trauma.

Peripheral (Genital) Stimuli

- Rythmic (sexual) tactile Stim. of glans / shaft → ejac.
- & this can be Stimul or Inhibited by the aforementioned Cerebral Centers.



1st phase = Emission (الإفراز)
(Sympathetic)

def. Explusion of Seminal fluid From < Vas Prostate SV into Post. urethra.

2nd phase = Ejac. proper (الطرد)
(= Antegrade ejac.) = Ejac. Expul
(Somatic S2,3,4)

def. Expulsion of Seminal Fluid from Post. Urethra To outside of The penis.

Events (3 Contraction). (بالترتيب)

A. Contraction of < Int. urethral sphincter → Shutting off ! BN (so No RGE)
Ext. urethra Sphincter → Shutting off ! prostatic urethra (so become closed space).

B. Contraction of : Smooth ms. of: Prostate, Epididymis, VD → Emission of prostatic sec. & sperms (1st Fract = split. Ejac

C. Contract of : Smooth ms. of SV → SV secretion (2nd Fract

. 2nd phase :

(Ejaculation proper or Antegrade ejac.) = Ejection
= Expulsion

(S2, 3, 4)

↓

2 Events

Reflex relaxation of Ext. Urethral Sphincter

Rythmic contraction of striated Perineal & pelvic fl ms. (Ischio- & bulbo-cavernosus)

↓

Ejac. of Semen From The penis.

NB ① The emission phase can be Voluntarily Controlled & once Emission occurs to prost. urethra → Ejac. become Inevitable

② prostatic sec. (افرازات البروستاتا) Then → Spermatozoa Then → SV (مني Split Ejaculate)

سؤال امتحان Disorders of Ejaculat^

Overactivity
. PE

deficiency
. Anejaculat^ Q
. Retrograde ejac.
. Retarded ejac. delayed

Anejaculation (Aspermia)

(Failed Ejac. despite:
- Sufficient Erotic stimuli
- Good Erection
- Adequate duration of Sexual Act.)

1. with Orgasm (orgasmic Anejac.)

Dry run or orgasm.

3 Failure of: Production / Emission / Antegrade ejac.

2. without orgasm (Anorgasmic Anejac.)

Psychogenic Aspermia (Anorgasmia)

1. def.
2. Types
3. Causes

---

1. Anejaculation with Orgasm (orgasmic Aspermia)

- AEt 3 Failure of seminal: Production / Emission / Antegrade ejacln : d.t
  - RGE or
  - Retained Ejac.

- NLLY: Semen is produced → then Emitted → then Antegrade ejac.

Production failure d.t Accessory glands:
- Atrophy (d.t Hypogonadism)
- (or) Fibrosis (post inflamm. (& TB, STDs))

↓

Emission failure d.t:
- Failed Accessory glands Contraction (sympathetic injury) → see Functional obst. Azoo'
- (or) EDO: organic obstruction

↓

Antegrade Ejac. Failure d.t:
- RGE (or)
- Retained Ejac. d.t:
  - urethral obst.: Failed ext. urethral Sph. relaxat (UMNL); valve; stone; strict
  - Failed pelvic Floor ms Contraction: Cong Spina bifida, Acq. Cauda equina lesions (LMNL)
  - MD (neuro)

Diagnosis

1. Hx & Exam:
   - Anejac. + Non viscous semen + Fructose -ve &
   - -ve postcoital urine for sperms → Failed Emission
2. Lab.
   - Post Coital Urine for Sperms; if +ve → RGE
   - Severe oligo or Azoo. → EDO.
3. Rad.: for
   - EDO
   - CBAVD → Renal Imaging.

Ht (of Cause)
1. Stop Drugs.
2. Ht of RGE.
3. TURED for EDO
4. Electroejaculator (For Failed Emission)

See Impotence (Treat.)

Emission failure

- ED → TURED
- Sympathetic
  - (1. Drug
  - (2. Electroejac.
  - (3. prostatic Massage.
  - (4. Sperm extract

"سؤال امتحان"

Retrograde Ejaculation (RGE)

(Cryptospermia = dry Run = dry orgasm)

def. Condition in which there is Normal Emission but not in its Antegrade direction d.t retrograde Flow in UB.

ch. By
1. Commonest Cause of Aspermia (Anejac.)
2. occurs in 1% of infertile Patients.
3. NL orgasm (تفريغ) ✓
4. Color of urine may be cloudy.
5. +ve post coital urine for < Sperms ✓ / Fructose ✓

AEt → "خلل بسبب مشكلة" "BN"

- **wide BN (Anatomical cause)**
  - (A) Cong <
    - Weakness of BN.
    - distal obst (Urethral valve) → Back pressure → BN dysf.
  - (B) Post operative:
    - TURP transurethral radical prostatectomy.
    - correction of BN obst. by
    - Y-V plasty (Commonest)
  - (C) others:
    - Pelvic Fracture < stricture Urethra / ext: urethral spasm d.t UMNL
    - Meatal stone.
- **Paralyzed BN (Neurogenic cause)**
  - Any cause of Sympathetic injury: < Complete: Anej / Partial: → BN → RGE
  - DM, M.S] Medical Causes
  - RPLND → Surgical
  - SCI → Traumatic
  - Drugs: (Pharmacological)
    - Antihypertensives < α Blockers / β Blockers / Guanethidine
    - Antidepressants.
    - Transquillizers.
- **Idiopathic (Psychogenic)**

Criteria For Ø:

1. NL orgasm + Hypospermia or Aspermia.
2. +ve postejaculatory urine for < Sperms / Fructose → هاتطلعه ازاي

Post-ejaculatory urine analysis

(post coital or post masturbation)

1. Urinate before ejaculate
2. Ejaculate (coital or by masturbate) → نجمع عينة السائل المنوي
3. Urinate → Urine centrifugate
   - at ≥ 300 X g
   - For 10 min
   - Sediment is resuspended to 1 ml.

↓

Mic exam

- **No sperms (& -ve Fructose)** → Failed Emission e.g. Sympathetic injury.
- **+ve sperms (& Fructose)**
  - **in pt ē Aspermia** → Any sperm No will diagnose RGE
  - **in pt ē Hypospermia & oligozoospermia** → Sperm No in Urine > Sperm No in the Antegraded semen sample → diagnosis of RGE.

NB [1] it should be remembered that if a post coital urine sample is taken from men who ejaculate normally → +ve urine for sperms ده طبيعي لان بعض الحيوانات المنوية حتكون تبقى في المجرى البولي من وقت آخر قذف

[2] Mic. exam. of post. ejac. urine is difficult in pt ē AZoo or severe oligo (ليه) (Fructose is preferred)

③ **Genital Reflexes Exam** (to detect Sympathetic injury):

Inf. Hemmorrh. N. (L1,2) → [A] **Ext. Anal Reflex** (superficial) : Stroking the perianal skin → contract of Ext. anal sphinct.

(hemorrhoidal N.) → [B] **Int. Anal Reflex**: introduction of finger to anus (PR) → contract.

Hypogastric plexus & presacral Ns.

[C] **Cremastric Reflex**: Travel through ilioing. & genitofemoral N. (L1 & L2)

[D] **Bulbocavernosus** : (S2,3,4 = Pudendal) Squeezing the glans (dorsum) → contract of ext. anal sphincter

④ **Cystoscope & Urethroscope** : to detect the AEt.

Treatment

Cause

- Anatomical Causes → rarely curable, but ± Surgical Reconstruct. of BN.
- Neurological Causes:
  - Neuropathy....Ht
  - Drugs....Stop
- Surgical Reconstruct. of BN.

Drugs

that ↑↑ Adrenergic Tone → Better Funct. of BN.

(For Ht of RGE & Failed emission d.t complete Symp. injury)

بنعطيهم له اسبرلين مبدئيا

ولو جالنا نتيجة ← بستمر عليه ،

ونفضوها أيام السوقين

Semen Retrieval For AIH.

أغلب الحالات = تنجح

D.M ← (1) TTT of course
(2) Medication
(3) sperm retrival.

Drugs for RGE

(↓ parasymp → ↑ symp.)

- Sympathomimetics (Adrenergic) α agonists
  - Ephedrine sulfate — ٣٠ مجم مرشيرليوريا أو قبل الجماع بساعة
  - Pseudoephedrine (congestal) — ٦٠ مجم ٤ مرات يوميا ١٢ قرص لليتريفين
  - Medodrine (الاعلى) 5 mg tds.
- Anticholinergics (Antihistamines)
  - Brompheniramine — ٨ مجم مرشيرليوريا أو قبل الجماع
  - Chlorpheniramine Maleate
- TCA (Anticholinergic) (Imipramin) Tofranil — reuptake norepinephrine → ↑ level
  - ٢٥ مجم مرشيرليوريا أو قبل الجماع

Sperm Retrieval For AIH in Cases of RGE

Artificial insemination by husband

سؤال امتحان

- Urine has deleterious effects on sperm motility & Morphology due to Acidity & Osmolarity
- So it's essential to adjust the pH (to become 7 or Alkaline) & the osmolarity (to become Isoosmolar)

(1) Urine alkalinization — either by

- NaHCO3 — صوديوم باكربونات — ٦٠٠ مجم مرشيرليوريا لمدة يومين قبل الجماع.
- or Replacement of bladder urine with Isotonic alkaline sol.
  - Voiding
  - Bladder irrigation by 12cm of ringer glucose or BWN

optimum milieu for sperms ↓ (أمثل)

(2) Adjustment of osmolarity

- Isosmolar urine has specific gravity ≃ 1.01
- assessment of specific gravity of urine of pt:
  - diluted urine → if < 1.01 → fluid restrict.
  - Concentrated urine → if ≥ 1.014 → ↑ fluid intake
- So the urine become Isosmolar

Steps for AIH in Cases of RGE

Abstinence — (1) الامتناع عن القذف (الجماع) لمدة ٣ أيام

(2) Adjustment of PH (Alkalinization, 7)
(3) Adjustment of osmolarity
(4) Antibiotics
(5) ✓

(6) ✓
- Bladder is emptied prior to ejaculation
- Bladder emptied immediately after ejaculation

علشان منقلل حجم البول قدر المستطاع

urination ↓ ejaculation ↓ urination

(7) Semen processing:
- washing & concentration: the sample (Ideally < 25 ml) + 25 ml capacitating & buffering medium e.g. Hams F-10 (to ↓ any harmful urine components)

↓

Centrifugation for 10 mins

↓

الطافي Supernatant is discarded & the sperm pellets (الكرات) are reconstituted in the same Hams F-10 solution using 0.5 - 2 ml

↓

- IUI or
- IVF / ICSI (if No. of motile sperms < 10 million)

Treatment of Anejaculation

According to the cause

(1) Failed production : d.t Hypogonadism → TRT

(2) Failed Emission

- ED → TURED Transurethreal radiction ejaculatory duct
- Sympathetic injury →
  - A: Drug therapy as for RGE
  - B. Electrical therapy,
  - C. prostatic Massage
  - D. Surgical sperm Retrival

(3) Failed antegrade ejaculation

- A: RGE ✓
- B. Retained ejaculation (acc. to the cause)

Treatment of Failed Emission:

A. Drug therapy : as in RGE.

B. Electrical therapy

- Electrovibral
- Electro-Ejaculation

① **Electro vibrat°** (Electro Vibrator) [Penile Vibratory stim. PVS]:

- **indicat°:** SCI ē level at T5 or below it.

- **Technique:**
  - placing the vibrator at dorsum or frenulum of glans penis → ++ dorsal penile nerve → S2, 3, 4 → reflex ejaculat°.
  - placing the probe on shaft or perineum → Not effective
  - vibrat° is maintained for ≃ 2-3 min or until antegrade ejaculat° occurs

↓

if failed wait for 1-2 minutes & repeat

↓

if failed

↓

ساعد auxiliary Method: ±

- زيادة ... use of 2 vibrators
- Abd. Electrical stimulat° additio.
- oral Sildenafil before PVS.

- **Advantage**
  ممكن استعماله في البيت بواسطة الزوج
  احداث [illegible] لتجميع عينة واستخدامها
  IUI 2

- **Disadv.** → autonomic dys reflexia:
  - Patients ē. injury at level of T6 or above
  - ± → uninhibited sympathetic reflex
  - → - HTN
    - Bradychardia
    - Headache.
    - Stroke, seizures or death.
    - Sweating
    - chills

.. Prevention of HT by Nifedipine.

د. [illegible]
[illegible]

C.I : untreated HTN or Cardiac dis.

---

(2) Electro Ejaculator (EEJ)

. if PVS Failed → EEJ (95% success of semen retrieval)

. . يتم إعطاء المريض General Anesth. ويتم إدخال الجهاز (probe) عبر طريق الشرج ← يشغل الجهاز بتوليف تصاعدي (Max 5-25 volt) & 10-20 stimulus).

. . (±) ← anterograde ejac. or RGE → so Alkalinization of urine is done before its use (as in RGE).

. يتم تنظيف المنطقة قبل وبعد ← Proctoscope to detect any rectal mucosal injury.

. يتم تكرار العملية كل شهر بالتنسيق مع فترة تبويض المرأة.

The Semen For IUI / IVF.

(C) Prostatic Massage:

. d.t Proximity of prostate to SV & ampulla; prostatic Massage may → seminal secret

. Chance of ejac. & obtaining Motile Sperms

(D) Surgical Sperm Retrieval: BX

. TESE or TESA

. ESA (PESA or MESA)

(2.) Psychogenic Aspermia (Anorgasmic Anejac.) = ♂ Anorgasmia

(معيار 1)

Def: Disorder of orgasmic phase of Male Sexual Response Cycle ch BY: recurrent & persistent (delay / difficulty or Absent) of attaining orgasm following sufficient sexual stim. & causes personal distress.

Types:
1. Primary: (جنسي بارد) Never achieved orgasm neither by Coitus nor by Masturbation.
2. Secondary: either
   - was NL for certain period then become Anorgasmic
   - or
   - Selective: Anejac. occurs ē his Partner (wife) & Not ē Masturbation or other Partner.
3. occasional: يحصل أحيانا وأحيانا لا مع نفس نوع الـ sex

Causes

علم جس الشوي

1ry Type

1. Rigid & religious Family background ē prohibition of sex.
2. Obsessive compulsive disorders. وسواس قهري
3. Biological Cause: there is strong likelihood of biologic variability in threshold of Arousal before experiencing orgasm.

2ry Type

(A) "Autosexual Orientation"

تجعل الذكر الذي يفضلون الاستمناء عن العلاقة الجنسية مع أنثى..

d.t role of:
- Fantasy
- Frequency
- Motivation

So with Masturbation there may be striking ↑'s (مؤشر)
- Speed
- pressure
- duration
- intensity

} Needed for orgasm
↓
which are Not present in NL Partner Relation

ومن هذه الأسباب أيضاً

e. Male Conditioning:

اتعود على حدوث القذف اثناء الاستمناء بالضغط الشديد على القضيب ملازم اثناء الجماع مش قوة الضغط زي ما اتعود

عليها ← "Psy. Aspermia"

(B) Others:
- Fear of impregnation (✓)
- lack of ♀ Physical Attraction.

Occasional:

d.t:
1. Lack of sexual interest in particular sexual Act (oral sex)
2. Alcohol.
3. SSRIs.
4. Aging.
5. Short interval bet ejaculation.

NB Delayed (Retarded) Ejaculation

- def. Inability to ejaculate or to reach orgasm in a reasonable Time despite NL sexual desire & Sexual stimulation.

- NL men ejaculate: 2 - 4 (10) mins From onset of Active Thrusting during Intercourse
- in delayed ejaculation: ejaculation (orgasm) may occur after ≥ 30 - 45 mins.

- Incid. 1 - 4 % of men

NB → Some Consider it (as a Slight Form of Anorgasmia (Psychogenic)

- Anejac. إذا هو نفس أسباب
- or
- Anorgasmia (without Ejac.)

- ضعف جنسي
  - ↓
  - Fatigue
  - Alcohol

Criteria for diagnosis of anorgasmia:

1. Absence of orgasm and ejaculation.
2. Presence of nocturnal emissions.
3. Prolonged sexual act.
4. Post-ejaculatory urine shows absence of sperm.

Tt of Psychogenic Aspermia (or Delayed Ejac.)

1. * **Sex therapy**: (2ry Type)

   (A) بيتعود انه يركز على مناطق مثيرة وجذابة في الزوجة ويتخيلها بصورة أكثر جاذبية

   (B) **Gradual sexual exposure**: & Combined manual & vaginal stimulat.

   . بيعمل استمناء في غياب الزوجة
   . ثم في وجودها / ثم يضع القضيب في الـ Vagina قبل القذف مباشرة
   . بعد الزوجة تساعده

   Combined manual & vaginal stim.
   (Holding base of penis while it inside the vagina.)

2. **Electrovibrator to obtain semen for AIH**

3. **Pharmacotherapy**: drugs used to reverse SSRIs induced anorgasmia or delayed orgasm:

   1. Cyproheptadine (Triactin)®
   2. Viagra
   3. Amantadine (200mg) [Antiviral that ↑ Dopamine].
   4. (Buspiron) → Buspar (Anxiolytic): 5HT A1 agonist in the generalized anxiety (15–60 mg/d)
   5. في أسوء وديبرسيو → Bupropion: ↑ Dopamine level.
   6. Apomorphine & Yohimbine.

NB ♂ Anorgasmia

لو سألوك احكي ... هابدء معاها

without Ejac.

→ Psychogenic Aspermia. (سكتة)

with Ejaculation

1. **orgasmic Anhedonia:** انعدام التلذذ
   - Sacral & Cephalic lesions (Tms) → interfer c afferent to cortex.
   - Psychic: الاحساس بالذنب نتيجة علاقة جنسية غير شرعية ... الاحساس بالنقص
2. Electroejaculation
3. Epilepsy
4. Certain spinal Tm.
5. Herion & Morphine withdrawal.

Table 7-4: Differential diagnosis of aspermia.

Criterion	Psychogenic aspermia	Organic aspermia			
		Production failure	Failure of emission	Retrograde ejaculation	Retained ejaculation
Orgasm	-	+	+	+	+
Nocturnal emission	+	-	-	-	-
Duration of intercourse	Prolonged	Normal	Normal	Normal	Normal
Emission	+	—	-	(+)	(+)
Postejacula-tory urine findings (sperm & fructose)	-	-	-	+	-
Pathogenesis	Psychogenic	Absent semen production	Absent contraction of accessory sex organs	Patent bladder neck	Anterior urethral abnormality
Etiology	- Sexual ignorance - Sexual inhibitions - Other factors	Severe androgen deficiency	Complete sympathetic injury	- Anatomical - Incomplete sympathetic injury.	- Obstruction. - Loss of contractile power.

GH / EH

Premature Ejaculation

(PE) (Rapid Ejaculation).

def.: According to (DSM - IV - TR); it has 3 Criteria:

1. Persistent or Repeated Ejaculation with Slight stimulation < Before, on, or shortly after Penetration (ILET) & before the person wishes it.
2. Marked distress or interpersonal difficulty. (d.t lack of satisfaction)
3. Not Exclusively d.t direct effects of Mental drug defect or Chemicals e.g with drawal From opioids.

Other definitions:

1. Inability of The male to control the ejaculation persistent or recurrent To Satisfy his Female partener in > 50% of Coital episodes provided That she is orgasmic.
   - because most ♂s ejaculate rapidly during certain Period of their life.
   - SOL / NL ♀ orgasm

2. PE has 3 hallmarks:
   - A. occurence of ejac. prior to wishes of both parteners (short IELT)
   - B. Lack of sexual satisfaction
   - C. Lack of self efficacy regarding the Condition (in ability to delay ejaculation sufficient to enjoy love making)

3. IELT (time elapsed bet. vaginal intromission & ejaculation); if < 1-2 mins → PE; CNL: 2-4 mins

   IELT = Intravaginal Ejaculatory latency

NB the 1st definition (DSM - IV) & the 3 hall-marks:

هذه التعريف تجنبا تحديد فترة معينة للعلاقة الجنسية والوصول الى الـ climax والذى يختلف متنوع بين الاشخاص ويعتمد على عوامل عديدة خاصة بمدى انسجام الطرفين في العلاقة الجنسية على سبيل المثال:

. if < ♂ climax at 8 min & ♀ (wife) climax at 5 min → Not PE
لانه كل من الطرفين حدث لها ارضاء من العلاقة على الرغم من قصر العلاقة

(المثال) على النقيض . if < ♂ climax at 20 min, ♀ " at 30 min → this PE
على الرغم من طول فترة العلاقة ولكن لم يحدث اشباع الزوجة

ولهذا لاحظ أن ،

. تعريف PE يعتمد على: قدرة الرجل على التحكم في القذف وقت الوصول الى ارتباط جنسي للطرفين
① < control of Ejac. / occurance of satisf.
ⓒ

if there is ♀ < Delayed orgasm or Anorgasmia → the problem is in the ♀ & Not in ♂ (PE)

However Ejac. control

③ IELT: has been used to measure PE in many studies ; shown to mediate patient or partner satisfaction c̄ sexual intercourse & Ejaculation-related distress.

IELT on those don't fit DSM overlap c̄
⑤ IELT on those fit DSM.

(NB) → DSM-IV-TR : Diagnostic & Statistical Manual of Mental disorders 4th edition Text revision -- by American Psychiatric Association (2000)

Classification of PE

1. Acc. to the onset:

ⓐ. 1ry PE → didn't experience NL ejac. before; always having PE.

ⓑ. 2ry PE → Acquired PE after a NL period of good ejaculatory control.

2. Acc. to the Frequency:

ⓐ. Selective → with specific partner or sexual act

ⓑ occasional → occuring once in a while (d.t) Fatigue or mental stress.

ⓒ persistent or recurrent → in > 50% of Intercourses.

3. Acc. to the Type:

- True: real loss of ejaculatory control
- False: The ejac. is NL in Time but There is ♀ ↗ Orgasmic dysf. or ↘ Sexual Ignorance. ♀ female Anorgasmia

4. Severity

- mild: IELT = 30 - 60 seconds
- Mod: = 15-30 seconds of Vaginal penet.
- Severe: ejac before sexual activity or ≈ in < 15 sec.

Causes of PE
(Most Cases are Psychogenic)

1ry PE (Psychogenic)
(٢ نظريات)

1. ~~Male conditioning~~ by Social Pressure..
2. Lack of Ejaculatory Control Technique
3. Psychodynamic theories:
   - anxiety about sex → (Sexual Assault) Conflict parent-child
   - psychoanalytic theory (Sadism)

~~Performance Anxiety~~

NB1: Male Conditioning by Social Pressure to reach Climax in a short period:
[illegible]

- Starting masturbation in early teenaging ē lack of Motive to prolong the Sexual Activity
- Making love under Conditions of Fear ([illegible]) (Back-Seat car sex)
- Encouragement of Rapid ejaculation From a prostitute [illegible]

2ry PE (Acquired)

Psychogenic (Common)
Anxiety of Performance.
e.g. (ED → PE)

prostatitis: EAU Guidelines for ejac. dysf. recognize that PE is strictly organic [prostatitis: 5-64%]
[illegible] PR [illegible] 40

Organic (less common)
1. DM
2. BPH
3. prostatitis
4. Urethritis
5. Neuropathy
6. pelvic Fracture. (& operation)
7. Hypersensitivity & Excitability of Dorsal N. & glans.
8. Genetic
9. Role of: Hyperthyroidism
   - Test ↑
   - PRL ↓
   - TSH ↑

NB2: ED may —(Excite)→ Performance anxiety → PE
PE may —(Excite)→ Performance anxiety → ED

incid.: 1/3 Ass. (ED) ⇅ (PE)

NB (B) lack of ejaculatory control techniques: (Controversy.)

عبارة عن Techniques بيمارسها ويتغلبوا بعض الأشخاص بتلقائية وتؤدي الى تأخر القذف زي:

- . thought distraction "التشتت"
- . pelvic floor ms contraction
- . alternation of depth & speed of vaginal thrusting.

(احفظ ١ من ٣ فقط..)

(C) psychodynamic theories:

[1.] Anxiety about sex d.t.:

- . Family incest (زنا محارم)
- . Sexual assault
- . Conflict c̄ one or both parents (أنانية)

[2.] unresolved & Excessive narcissism: during infancy → Exaggerated importance being placed on penis & ! associated pleasure of urination.

[3.] psychoanalytic theory: deep sadistic wishes of some men towards the women that make the man punish here by depriving here from pleasure or by soiling her. (اهانة وتدنيس)

(D) Performance Anxiety: (Fear of failure to satisfy the ♀).
(شاكين فيها)

[A] ED: if the ♂ is afraid that his erection will not last d.t < previous ED or Imagined Failure → ppt of → PE. the patient may have used the phrase "Honey; You Excited me So much I just couldn't hold back"

بيلزمه بسبب خ الزوجة انها لما لمنته اناء ع قويه عشان كده مش عرفت تتحكم القذف
خلاص نيصل للقذف طبيعي هايحدث ارتخاء بالتالي وجد مبرر لل ED من طريق جري (PE)

[B] ♀ may belittled him with comments as "You must not be much of a man since you can't stay hard until I'm satisfied) → performance anxiety & → PE. [in addition she may have difficulty in achieving orgasm through intercourse & may require clitoral stim. (الوشفو فيه ده..) → always failure of her coital satisf.

انت مش راجل لانك مش قادر تتحكم القذف لحد ما كيدت لي انا

Complications of P.E

1. in males → 2ry ED
2. in females → Orgasmic dysf. (or) impaired Sexual interest
3. Deterioration of sexual or marital relations

PE يجعل المريض غير قادر على التحكم بالقذف ← فبيبدأ يتهرب من العلاقة الجنسية فيتضرر بسببها فيتضرر الزوجة انها لم تعد تثيره جنسيا فيحدث استياء لطرفي العلاقة وفقدان للعلاقة الزوجية

DD

1. Female Anorgasmia:
   - average time for ♀ Climax is ≃ 12-25 min
   - So in anorgasmia or severe delayed orgasm of ♀ → nearly all men have PE.
2. Drug induced PE: resolved by Drug stop.
3. prosemen or pre Come

Biochemical Factors in PE:

للأسف فقط (HL)

من خلال البيانات اتضح ان:

1. High T. level < Total / Free seen in PE pt. > NL
2. ↓ Semen level of PAP & α-glucosidase in PE pt > NL
   (s. Epidid. & Prostate dysf. may → PE).
3. Hyperprolactinemia: may → . PE . ED . Anxiety . Metabolic Synd.

Mean lowest quartile level of PRL.

Treatment of PE

1. Reassurance of The Couple
2. Relief of performance anxiety
3. Pharmacotherapy:
   - oral therapy
     - Antidepressants < TCA / SSRI-s
     - Tramodol
     - Viagra.
   - Topical " "
     - α-Blockers
4. Sex Therapy
5. Other lines: ICI, Condom, e.t..

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[1] Reassurance of Couples:

- لابد من حضور الزوجة في جلسات العلاج
- تصحيح أي أخطاء في مفاهيم العلاقة الجنسية — Misconception of sexual relation
- بنفهمهم ان الافلام الجنسية غير حقيقية وانه اتصور (٣٠ دقيقة) هي تم تصويرها على مدار (٢-٣ أيام)

[2] Relief of Performance Anxiety

لو فرضنا ان PE بيحدث

مع

- Sexual intercourse (بداية ادخال القضيب)
  - stop vaginal penetration and do other sexual activities
  - هانوقف الادخال الى ان يحدث علاج للـ PE ويخلي الزوج في هذه الفترة يمارس اشكال أخرى من العلاقة الجنسية لتشبع الزوجة.
    - * oral ✓
    - * Manual ✓.
- Foreplay or Early Sexual Excitement
  - Serious problem & may indicate that 1ry PE.
    - ↓
    1. tt of PE
    2. Consultation of Mental Health Care professional.

← [3] Pharmacotherapy:

. Mechanism & Action:

TCA
SSRIs

A In PE: antidepressant

. TCA → unknown mechanism but ± d.t:
① -- autonomic process involved in ejac. & Erection (Antiadrenergic & cholinergic) → sympatholytic
② ↓ Psychological Arousal
③ Anxiolytic effect
④ -- Reuptake & Serotonin → ↑ level / Dopamine → ↑ level

Serotonin → inhibit sexual function

. SSRIs → selectively -- Serotonin reuptake → ↑ Serotonin level → -- SD & ↓ Erect → -- Ejac.

Very little effect on reuptake of Norep. & Dop.

B Analgesics: TCA (see PHN)

C Anti-inflammatory & Immunomodulators:
down regulate . IL 6, 10 . TNF α . IFN γ

S.E ① TCA: anticholinergic SE
. drowsiness
. dizziness
. dry mouth / Yawning
. Blurred Vision
. Tremors
. Rash
- Sexual problems
- Wt gain or loss.

(Anticholinergic manifs)

Sexual / non Sexual

② SSRIs: . Nusea Yawning
. diarrhea
. Agitation
. Headache
. Sexual:
. ↓ libido
. Anorgasmia
. ED
. Serotonin Synd
. Tachyphylaxis:

NB **Serotonin Synd** = Post SSRIs Sexual dysfunction = SSRIs discontinuation Synd.

. def: sexual (non) disorders occuring following discontinuation of SSRIs. That may lasts for ms – ys.

Fluxetine → SD

. Manifs: Non sexual / Sexual

Sexual:
. ↓ libido
. Anorgasmia
. ED
. PE
. Priapism
. ↓ Semen vol
. Genital Anaesthesia

Non sexual:
. dizziness
. Nusea
. Vomiting
. anxiety
. Headache
. lethargy
. Agitation
. insomnia
Suicide.

Commonest: Paroxetin
. either ↓ dose or
. stop.

NB: Sexual Function & Antidepressants:

(SSRIs) → Commonest group affecting The sexual Function (↓ SD/Anorgasmia, ED)

without ED:
. Buspiron (Buspar)
(or) . Bupropion (wellbutrin)

. Trazodone (small dose) Trittico
(or) . Nefazodone (Deprysert)
. Mirtazepine (NSRI)

Related To Trazodone

↓

(Imp) → الـ ٥ دول مش بيعملوا (↓ SD & ED)

. Drugs That ↓SD (sexual desire) or causing ED e.g TCA & SSRIs → استعمل معاهم
. Apomorphine
. Yohimbine

* Doses
TCA
- Impramine (Tofranil) → 25 - 50 mg /d.
- Clomipramine (Anafranil) → 25-50 mg /d
(٣-٦ ساعات قبل الجماع)

SSRI (طريقة ٢٠ مجم يوميا لمدة أسبوع ثم ٤٠ لو فيه مشكلة)
- Sertraline (Lustral) → 25-100 mg /d
- Paroxetine (Seroxat) → 20-40 mg /d
- Fluoxetine (Prozac) → 20-40 mg /d
- Citalopram (Cipram) → 20 mg /d.
- Dapoxetine (الأحدث) (الأقوى) لأنه استخدامات أدويه (30-60 mg/d)

كل هذه الأنواع ممكن استخدامها بـ ٢ طرق فقط

(أول ساعة) ①. On demand → ساعة قبل الجماع
②. Continuous → لفترة ٦ أسابيع
لو مش في نتيجة تزداد الفترة الى أن يحدث نتيجة
ثم on demand.

(on demand) يعني ممكن نبدأ بإستخدامه قبل العلاقة الجنسية
لو مش جايب نتيجة نستعمله (Continuous)

(غالبا بيترفع المسيره ٥-٢٠١٧ ... ٢٠١٢ ...)

Dapoxetine: is the only FDA approved drug for PE (Phase III)

(سؤال) Don't Forget To Treat ED as it may Improve PE. How ?? if PE is 2ry to ED.

ترتيب الأنواع على حسب القوة:

كلام (Joy Box البار) → Paroxetine "الأقوى"
- Clomipramine
- Sertraline
- Fluoxetine
- Citalopram

كل الأنواع لابد من سحبها تدريجيا على مدى ٤ أسابيع
ماعدا (Fluoxetine) علشان نتجنب → (withdrawal Sympts.)

NB
- TCA effective
  But S.E
  - Anticholinergic: Marked
  - Sexual: less marked
- SSRIs: Effective But → marked ↓ of sexual Funct.
  So combine it with Aphrodisiacs.

* Viagra & PE

HL

Can Treat PE through 2 Mech.

Indirect → ① improving ED → improving anxiety of Performance
→ improve PE

Direct → ② . ↑ NO & ↓ Symp. tone
. Relaxation of ms of Vas, Epid. & SM
→ Antagonize Symp.
. ↓ Erectile threshold
. down regulation of Receptors involved in Somatosensory latency time.

Sympathetic effect (Sm relaxation) ↓ Erectile threshold.

Viagra + SSRIs → More S.E.

* Topical Therapy (Local Anesthetics)

. lidocaine 2.5%
. prilocaine 2.5%
. Korean SS Cream (Herbal)

what are disadv. ?? ↓ pleasure in ♂ (dt anesthetic)
ED.

4 * Sex Therapy →

5 Others

. ICI → Help Conventional PE

. Condom → ↓ penile sensitivity → ↓ PE.

. Masturbation

⇒ B Tramadol

. Mech. 1. Centrally acting opioid analgesic

2. ↓ Reuptake of ← NE, Serotonin, GABA

. Dose ... 50 mg PO 1/2 hrs before intercourse

. don't exceed 100 mg in 6 hr &

400 mg 12/24 hr.

. Efficacy : effective

. S.E : Addict (So Not used or limited use in PE).

⇒ C. Viagra in PE : May improve PE either By

Indirectly

By improving ED → relief of performance anxiety → improved PE.

Directly ??

1. Sympathitytic effect

2. down regulation of Rs involved in somatosensory latency time. ↓ sensitivity of nerves

⇒ D α-blockers (α_1 --) : Trazosin 5 mg, 1d) → So ? efficacy.

• Topical therapy

(local anaesthetics)

. e.g. lidocaine 2.5% prilocaine 2.5% & Korean 5S Cream (Herbal)

. disadv. ↓ CD ↓ Pleasure in ♂ & ♀

[4] Sex Therapy   د/ احمد عبدالله (مهم جداً جداً)

[5] Other lines

- ICI → بيساعد على الاحتفاظ بالانتصاب بعد القذف فبيساعد على ممارسة ثانية وبالتالي بيطول المدة.
- Condom → ↓ penile sensitivity
- Masturbation → بعمله قبل الجماع بساعة او ساعتين وبالتالي بيأخر Ejac.

one or 2 hrs befor sexual intercourse

(HL) 186 كلام مع د/ابو سنة [زيادات بسيطة]

→ anti depressant ē out ED

Buspar   trittico

Amantadin (antiviral)   ↑ desire

Asthenospermia (definition ...)

AET

Proven Causes (7)

① Faulty Collection:
- Long Abstinence period
- Spermicidal Container
- use of Saliva, soap, any lubricant
- exposure to extremes of heat
- prolonged incubat° in Seminal plasma.

"physiological Polyasthma"

So: Repeated analysis under Carefully Controlled Conditions should be done.

② Infection:
- E. Coli ↓ Motility
- Ureaplasma Can adhere to sperm → ↓ Motility

3 Micro. Chlamydia

So eradicat° of Doxycycline may be ass. c ↑ Pregnancy rate.

③ Anti sperm Abs:

Abs may induce Membrane defects → affects the Intra Cellular Ca^{++} & ATP → ↓ Motility.

So: Asthenospermia (in) pt c
- Genital infect° or obst. or Trauma ... etc → Test for anti Abs.
- Immunological infert.

Unproved (Possible) Causes (5)

① Varicocele
② Epididymal dysfunct°
③ Deficient factors in seminal plasma necessary for Motility. (Na+ bicarbonate & PG)
④ presence of inhibitory factors in sperm & Seminal plasma.
⑤ functional defects of the axoneme:
- defective Sperm memb. ATP production
- adenyl cyclase ↓ AC activity
- ↓ Calmodulin (Major Ca++ binding Pth)
- protein carboxy Methylase deficiency: enzyme in tail Need for motility.

Clinical tips:

presence of Symptoms Suggestive UTI or genital inf → localizat° Culture should be done and appropriate antibiotic therapy should be given.

empirical antibiotic in c absence of documented inf. → no effect on Motility.

structural

① axonemal defects: → Immotile Cilia Synd (IRV Ciliary dyskinesia)
→ 9+0 synd.

A Immotile Cilia Synd:

def AR disorder ; 1 : 30.000 ; defect in ② gene:
- DNAH5 & DNAI1] → encodes proteins of dynein arms & other links of microtubules (Cilia) → Infertility + Triad of:
  - Bronchiectasis
  - Chr. sinusitis.

Immotile Cilia + Globozoosp. ‖ Sterilizing sperm defect.

NB Immotile Cili Synd: 50% oss. é Situs inversus → Kartagner

defects in axoneme of Microtubules (Cilia = Sperm tail) ±:
1. lost dynein arm (s)
2. lost Central Single microtubule (9+0 synd)
3. lost Nexins or radial spokes.

- ONF: NL Semen < Count Viability but 100% Immotility
- IVF → ICSI

B 9+0 Synd. : synd. é structural defect of ~~The Sperm~~ tail., there is loss of Central pair of Microtubules → Immotility.

Nb Necrozoospermia: (rare) Vitality < 75%
- Def → Spermatozoa é No Viability
- usually seen in (Viability of sperm < 75%)
  - Chr. prostatitis
  - unilat ejaculatory duct Obst (oss. é ↓ Semen Vol.)

- Indications to do Vitality Test:
  if Grade D (Immotility) > 40%.
  Structural

Tests < NIE stain / Host

AAA. é Hypospermia

Pas cellular

- **Types of Asthenospermia:**
  - Isolated Astheno:
  - Oligo Astheno Zoosp:
    - Most patients with astheno also have associated defects in sperm production & morphology
    - Sperm with poor movement often demonstrate morphological abnormalities.
    - In cases of oligo astheno, the diagnostic work up should be identical to the work up of oligozoo.

بيزكلس → OAT

Diagnosis of Isolated Asthenosp.

(1) History	(2) Clinical ex.	(3) Inv.
Pulm. dis	Varicocele	Repeat analysis (? Faulty collect)
Risk factors of antisperm Abs	epid. abnormalities	EPS culture
Genital inf.	urethral disch.	Antisperm Abs
	EPS & P/R	حتتين كلينيكال

(1) Markedly disturbed motility in the presence of otherwise almost normal sperm parameters → لازم تشك ع (970 Synd.)

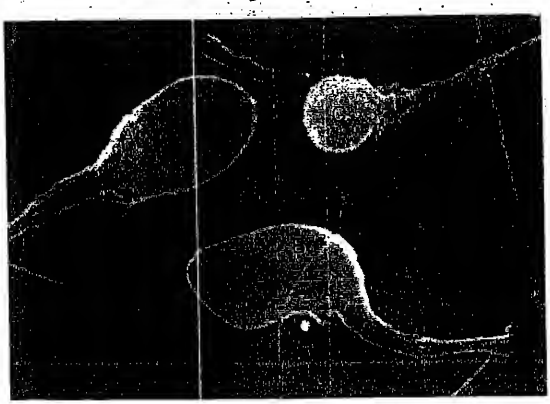
(2) If motility <5-10% → do E/M.

Globozoospermia (Round headed syndrome)

- **Def.** Severe form of teratozoospermia in which the sperm head appears rounded d.t absence or defect of Acrosome.
- **Etiology:** Homozygous Mutat^ in SPATA 16 (spermatogenesis specific gene)
- **Types of Globozoospermia**

• Complete (Total) (Type I)	Partial (Type II)
• Complete absence of Acrosome • No Natural Concept^ by ICSI	• Hypoplastic Acrosome • ± Conceive Naturally.

- Globozoospermia + Immotile Cilia Synd → Called: ??
- **Tt:** ICSI (However results are poor d.t disturbed sperm-associated oocyte activat^ factor



Sperm morphology is related to the fertilising capacity by in vitro fertilisation. (A=normal sperm head; B=abnormal head; C=globozoospermia--a rare syndrome in which all sperm heads lack acrosome caps and cannot fertilise)

Cancer & Infertility

Mechanism of Infertility d.t Neoplasm

Cont

Cancer associated Conditions

1) Cryptorchidism: 2.8% ass. ē CIS

Genetic: evidence of chromosomal anomalies, cancer pts.

• Infertility 2ry To the Cancer itself:

1. Destructive effect of Tm → Severe impairment of Spermatogenesis
2. Immunological effect. Tm → disturbed Blood Testis barrier → Anti-sperm antibodies
3. Endocrinal Effect: in Leydig & Sertoli Tm → Estrogen level → infertility.
4. Psychological & physical: Stress → infertility
5. obstructive effect: Epididymal obst. «by» Neoplasm.

• Infertility 2ry to Cancer therapy:

1. RPLND → Sympathetic denervatē → lack of Antegrade ejaculat^
   - Failed emission
   - RGE
2. Radiation & chemotherapy. Causes Azo or Severe oligo (usually 2-3 months after ttt).

↓

So Must do Cryopreservat^ before therapy

- destructive
- obstructive

- Immunological
- Endocrinological
- Psychological: